# PAPER TRADE JOURNAL

THE INTERNATIONAL WEEKLY OF THE PAPER AND PULP INDUSTRY AND THE PIONEER PUBLICATION IN ITS FIELD

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**—INCORPORATED—**

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JAN. 27 1938

Vol. CVI
No. 4

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Entered as second class matter at the Post Office at East Stroudsburg, Pa., under the Act of Congress of March 3, 1879. Published every Thursday by the Lockwood Trade Journal Co., at 34 N. Crystal St., East Strodusburg, Pa. Executive and Editorial office: 15 W. 47th St., New York, N. Y. Domestic subscription U. S. and possessions, $4.00 per year.

# PAPER TRADE JOURNAL

THE INTERNATIONAL WEEKLY OF THE PAPER AND PULP INDUSTRY AND THE PIONEER PUBLICATION IN ITS FIELD

Published Every Thursday by the LOCKWOOD TRADE JOURNAL CO., Inc.

Executive and Editorial Offices: 15 West 47th Street, N. Y. C.
Western Rep.—H. K. Vinton, 123 W. Madison St., Chicago, Ill.


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The PAPER TRADE JOURNAL is indexed in Industrial Arts Index

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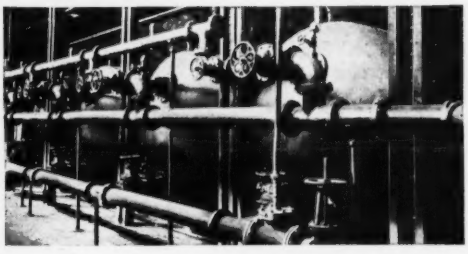
# CLEANER PAPER



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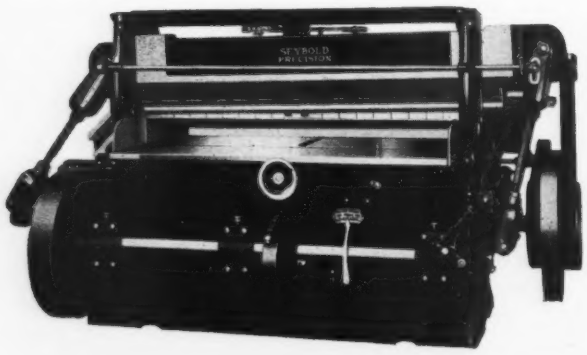

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# PAPER TRADE JOURNAL

Reg. U. S. Pat. Off.

SIXTY-SIXTH YEAR

PAPER

Established Feb. 17, 1899
Consolidated Nov. 16, 1899
with PAPER TRADE JOURNAL.

Vol. CVI, No. 4 Thursday, January 27, 1938

PAPER

Established Sept. 21, 1918
Consolidated Feb. 19, 1925
with PAPER TRADE JOURNAL.


# Canada May Try Stabilization Plan Soon

## Premier Duplessis States Quebec and Ontario Governments Seek to Co-operate for Good of Pulp and Paper Industry — Rival Unions and Collective Bargaining Clause Prevent Mills From Signing Labor Agreements.

[FROM OUR REGULAR CORRESPONDENT]

MONTREAL, Que., January 24, 1938. — A new angle to the difficulties confronting the pulp and paper industry was brought out by Premier Duplessis when a delegation representing the Confederation of Canadian Catholic Workers called on him a day or two ago. The delegation asked if it were not possible to force collective agreements," charging that pulp and paper companies refused to sign collective agreements and recognize unions.

### Premier Duplessis' Advice to Union

Premier Duplessis, in reply, called upon all the labor unions in the province to examine carefully such problems, not only from their own point of view, but also from the point of view of their employers, before taking any step which might strike a blow at industrial progress. He declared that friction between the Catholic labor organizations and international unions in Quebec was preventing pulp and paper manufacturers from signing collective labor agreements with their workers. The employers did accord the unions recognition, he said, but were threatened with "boycott in the United States" if they signed any collective agreement with the Catholic unions of Quebec.

### Catholic Unions Strongest in Quebec

The Premier said the workmen "have no idea" of the position of employers. The Catholic unions have the majority of workers in mills in certain centres in Quebec, but in others the majority are international union members, he added.

"International and interprovincial complications stand in the way of labor agreements in the pulp and paper industry, and the Government has only one course to follow," the Premier went on.

"Let us be logical and reasonable. All labor interests in Quebec deserve the same consideration and justice, and employers need and must have cooperation.

"It would not be reasonable to force employers to any action which might result in paralyzing industry and bringing idleness to the workers. We are against coercion in any form. We want none on the part of the employers, so neither do we want any on the part of the workers."

Another interesting revelation by the Premier was his statement that as soon as possible, the Quebec Government, in co-operation with the Ontario Government, will move to "stabilize the pulp and paper industry." This statement follows the recent conference in Montreal of representatives of the two governments in connection with the pulp and paper industry. Mr. Duplessis said the government had already aided the pulp and paper industry, the companies having been granted reduction in ground rentals, and the workmen in the woods aided by having their wages raised to the highest point they had ever reached.

## Work on Lake Sulphite Mill Resumed

[FROM OUR REGULAR CORRESPONDENT]

TORONTO, Ont., January 24, 1938—Construction work is being resumed on the Lake Sulphite mill and townsite at Red Rock, Ont., after a temporary layoff of men over the holiday season. W. H. Hurd, manager of the company, states that the mill will be producing early in April. Additional financing, recently completed, assures continuation of the project. In addition to costly delays, one of which was occasioned by the loss of the steamer Neebing, Mr. Hurd added the company encountered a rising market during building operations, which meant that higher prices for materials and equipment had resulted.

Additional financing was arranged to compensate for the increased costs and the organization is now in excellent financial condition.

## New Ontario Mill Starts Production

[FROM OUR REGULAR CORRESPONDENT]

TORONTO, Ont., January 24, 1938—It is learned that the first of two machines installed in the new mill of Ontario Paper Company at Comeau Bay, has started operating and others will be ready shortly. Capacity will run in excess of 100,000 tons per annum and all of the output will be consumed by the New York News, owned by the Chicago Tribune, which operates a newsprint plant at Thorold, Ont., under the name of the Ontario Paper Company.

# Larger Orders Sustain Chicago Market

## Midwest Paper Trade More Optimistic of Future As Volume of Orders Improve — Carpenter Paper Co. Consolidates Firm Name — Chippewa Products Expand — Salesmen Hear Talk On Kraft Pulp—Other News.

[FROM OUR REGULAR CORRESPONDENT]

CHICAGO, Ill., January 24, 1938—The consensus of opinion in the Chicago paper trade seems to be that the most stagnant period of the current recession is about over. From various offices comes news of regular market buying of fair volume and noteworthy for its consistency. Especially is this condition prevalent in certain lines where inventories are known to be extremely low. Meanwhile, the waste paper market, particularly the better grades of waste, is beginning to show material signs of resistance. Local observers expect the change to better demand to be slow and gradual, perhaps closely following the general business picture as it fluctuates on news emanating from Washington.

Locally, the fine papers had a fairly good week. Sulphites were running in better demand and all grades of bonds were firm according to reports. Ledgers were similarly of a brighter tone. Books held steady while covers showed further evidence of some resumption of confidence on the part of buyers. Paper board firms reported a good two weeks in January while those firms specializing in building papers were hopeful for a better than expected twelve months ahead. Specialties were stated to be about the same. Kraft offices had little to comment upon while the groundwoods were steady to a shade better than last week.

### Carpenter Co. Consolidated Name

One of the well known paper firms of the middle west, the Carpenter Paper Company, has recently announced a considerable simplification in its corporate structure which has come through to Chicago from the Des Moines and Sioux City offices of the firm. Operating in a dozen sales territories in the middle west, the firm has consolidated into one corporate name, the Carpenter Paper Company. Formerly the name of the firm also carried the name of the city in which the particular sales territory was located. The change is reported to have been made in the interests of simplicity and efficiency.

### Salesmen's Assn. Hears Talk on Pulp

The midwest division of the Salesmen's Association of the Paper Industry had the opportunity of utilizing its Monday, January 10, meeting to listen to a discussion of the bleaching of kraft pulp given by W. L. Savell of the Mathieson Alkali Works. Mr. Savell gave an interesting presentation on a technical subject which the salesmen found to be of real value to them. At the same meeting the middlewest division presented Ralph Burnett of the American Writing Paper Company, a set of four matched woods as a reward for his splendid efforts as chairman of the golf committee for the past year. The job of golf chairman for five big outings is no sinecure and it was the consensus of opinion that Mr. Burnett well merited his award. The Association also selected a nominating committee for the annual meeting to be held in New York City next month at the time of the N.P.T.A. sessions.

### Chicago Men Attend Superintendents Meeting

A number of Chicagoans are reported to have attended the joint meeting of the Superintendents and Technical Men held at Kalamazoo, Michigan, on January 20. At the meeting those in attendance were privileged to listen to discussions by F. L. Zellers on "Human Relations in Industry" and by Dr. R. F. Reed on "Lithographic Papers." It is reported that about 200 executives attended the session in the Michigan city.

### New Zellerbach Items Listed

The most recent price list of the Midland Paper Company, division of Zellerbach Paper Company, lists as new items, Nekoosa Bond, Nekoosa Ledger, Nekoosa Mimeograph, Nekoosa Bond Envelopes, John Edwards Bond, John Edwards Bond Envelopes, Baronet Enamel, Dependable Offset, Randolph Halftone Print, Platinum Bristol, Regal Cut Cards and Coronation Weddings and Announcements. The same mailing also lists "for customer convenience" the staff personnel including G. A. Meuller, sales manager; J. A. Dianis, credit department; D. C. Frisbee, manager of mill department; F. M. Johnson, manager announcement department and Frank Naperala, John Miller and Henry Kraus, telephone sales. The names of nineteen members of the sales staff are also listed by Harry B. Todd, manager of Midland.

### Exports of Paper and Paper Products

Considerable publicity was given in Chicago to the news from the U. S. bureau of foreign and domestic commerce that exports of paper and paper products from the United States during November were 50 per cent above exports recorded for the corresponding period of 1936 and that present indications are that total exports for 1937 will reach the 1930 total of $30,000,000. United States exports of paper and paper products during the first eleven months of 1937 were valued at $28,348,941, an increase of about 40 per cent compared with the same period in 1936.

### Chippewa Paper Products Lease Building

The Chippewa Paper Products Company has leased from the John F. Jelke Company for a period of five years, the two story building containing 50,000 square feet located at 2637-2659 Polk Street, Chicago. Larger quarters are reported to have been necessitated because of expanding business.

### Swigart Gallery of Printed Ideas Popular

The Swigart Paper Company, Chicago, has utilized its new "Gallery of Printed Ideas" as the subject matter for a splendid direct mail piece which outlines the various uses of this Gallery for the "man who faces a blank page." Current reports are that the

Gallery is proving particularly interesting to printers, advertising men, artists, salesmen and agency executives who have found the 7000 piece reference file and the various displays quite helpful. During January the Swigart Paper Company is featuring the leading direct mail campaigns of paint manufacturers and hotels as well as examples of design by Stanley Ekman and Taylor Poore.

### Kor-gen Paper Co. Adds More Space

The Kor-gen Paper Company has leased for a term of two years 2,800 square feet of space on the first floor of the building at 711 W. Randolph Street, Chicago.

### Developing Paper for Educational Needs

In the interest of better service in creating and developing paper for contemporary educational needs, Katherine Schenk, formerly of the American Crayon Company, New York, has been added to the Education Department of Bermingham and Prosser Company, as assistant to Mrs. N. M. Ingham, Director. Miss Schenk's headquarters will be at the general offices of the Company, 128 South Sangamon street, Chicago, but her activities will extend over the entire United States, with attendance at the national and sectional art meetings.

## To Be Manager of Wardlow-Thomas

[FROM OUR REGULAR CORRESPONDENT]

DAYTON, Ohio, January 24, 1938—Effective February 1, Edgar Turnbull, technical director of Knowlton Brothers, Inc., of Watertown, N. Y., will assume the duties of general manager of the Wardlow-Thomas Paper Company of Middletown, Ohio.

This was the announcement of H. L. Brooks, vice president of the company, who also has officiated in the capacity of general manager. Mr. Brooks stated that because of increased business and expansion in the company, the position of general manager will be turned over to the newcomer.

Mr. Turnbull has been associated with Knowlton Brothers since 1928, beginning as a chemist. Three years ago, following enlargement of the technical department, he was placed in charge.

A graduate of the New York State College of Forestry's pulp and paper manufacture department, his first employment in 1927 was with the J. P. Lewis Company, of Beaver Falls, N. Y., where he gained his first practical paper mill experience. He went to the Knowlton Company from the Beaver Falls mill. Mr. Turnbull is recognized as an expert in the manufacture of specialty papers.

His wife and three-year-old daughter, Mary Louise, will join him in Middletown in the spring.

## Air and Erosion Eliminator

A little four page booklet on the Air and Erosion Eliminator, a patented item manufactured by the Condenser Service and Engineering Company, Inc., 310 Twelfth street, Hoboken, N. J., describes the deterioration and failure of the condenser tube and tells how its life may be extended by the Eliminator.

The Eliminator removes the two chief causes of condenser tube failure and destruction, namely, "attack by oxygen entrained in circulating water" and "electrolytic action."

## Government Paper Bids

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., January 26, 1938.—The Government Printing Office has received the following bids for 535 sheets of buff 100 per cent new rag index; Barton, Duer & Koch Paper Company, at $19.00 per C sheets; and J. Francis Hock & Company, $19.26.

For 25 rolls of 36 inch corroflex wrapping paper; Industrial Paper Company, at $3.65 per roll less 2 per cent; Sherman Paper Products Corporation, $3.65; and T. A. Cantwell & Co., $3.65, less 1 per cent.

For 5,810 pounds (70,000 sheets) of 100 per cent rag, white recording chart paper; James F. Walsh Paper Corporation, 29.5 cents; Walker, Goulard, Plehn Company, 26.82 cents; Paper Corporation of U. S., 28.73 cents; Old Dominion Paper Company, 27.16 cents; Stanford Paper Company, 27.88 cents; Reese & Reese Inc., 29 cents; Whitaker Paper Company, 29.5 cents; and R. P. Andrews Paper Company, 35.5 cents.

For 10,000 sheets of 22 x 28 gray photo mount board; Mathers-Lamm Paper Company, at $37.38 and $35.73 per M sheets; M. S. Ginn & Co., $37.35 less 2 per cent; Whitaker Paper Company, $35.67; R. P. Andrews Paper Company, $37.60; Charles W. Speidel & Company, $37.64 less 2 per cent; George W. Millar & Co., $37.00; Reese & Reese, Inc., $37.79; Hurlock Brothers, Inc., $37.65 less 2 per cent; Milton Bradley Company, $36.45; Barton, Duer & Koch Paper Company, $37.25; Enterprise Paper Company, $46.92 and $54.00 less 1 per cent; Charles G. Stott & Company, Inc., $49.43 less 2 per cent; and Old Dominion Paper Company, $36.916.

For 200,000 pounds of manila calendered tag board; Barton, Duer & Koch Paper Company, 7 cents.

For 5,000 pounds of rope manila paper; Reese & Reese, Inc., at 15.5 cents; and R. P. Andrews Paper Company, 15.5 cents.

For 10,285 pounds (110,000 sheets) of white sulphite writing paper; Cauthorne Paper Company, 7.69 cents; Barton, Duer & Koch Paper Company, 7:19 cents; Aetna Paper Company, 7.93 and 7.64 cents; R. P. Andrews Paper Company, 7.74 cents; Paper Corp. of U. S., 7.63 cents; Reese & Reese, Inc., 7.69 cents and 7.59 cents; Stanford Paper Company, 7.64 cents; Enterprise Paper Company, 8.24, 8.499 and 8.137 cents less 2 per cent.

For 1,000 sheets of 18 x 23 overlay board; E. H. Walker Supply Company, 50 cents per sheet less 2 per cent; Martine-Cantine Company, 38.5 cents; Whitaker Paper Company, 38 cents less 3 per cent; and R. P. Andrews Paper Company, 36 cents.

## Slump Delays New Sulphite Mill

[FROM OUR REGULAR CORRESPONDENT]

TORONTO, Ont., January 24, 1938—In a holiday message to the city of Prince Rupert, B. C., Frank L. Buckley, representative of interests which plan the establishment of an $8,000,000 sulphite pulp plant there, states that there is no cause for concern regarding the delay in starting on the plant. The disturbed international situation and the constant rumors of the expected spread of war, have delayed a start on the project, says Mr. Buckley, and as soon as there is more stability work will be commenced. Various details necessary to be worked have been found most satisfactory by those who will find the capital.

# New Abitibi Reorganization Plan Looms

## Dismissal of Bondholders' Application for Sale of Assets of Abitibi Power & Paper Co. Causes New Delay In Financial Settlement of Company — Balancing Newsprint Production — Paper Box Industry Is Expanding.

[FROM OUR REGULAR CORRESPONDENT]

TORONTO, Ont., January 24, 1938. — Following dismissal last week by Justice McTague of the Bondholders' application for the sale of assets of Abitibi Power and Paper Company, the next most likely move, according to information received, will be for the liquidator to form a new plan of reorganization which will meet the approval of all classes of security holders. In the meantime, it is contended that the move should give every type of holder a deal.

The bondholders' plan of reorganization, which took the form of calling for sale of Abitibi's assets to a new company, yet to be formed, was dismissed primarily on the ground that the matter did not come under the Ontario Judicature Act, but properly fell within the jurisdiction of the Dominion Companies' Creditors' Arrangements Act.

The next logical step, as outlined by those in close touch with the Abitibi situation, will be for some one, most likely the liquidator, to work out a plan of reorganization and then call groups of holders of each class of security and obtain their approval. At the same time there does not appear to be any reason why a group of holders of any definite class of security should not get together and work out their own plan.

### Stand of Opponents of Plan Justified

Justice McTague pointed out, in his decision, that he was not entirely convinced that a plan more fair to the bondholders could not be worked out. The stand of the oppsition, he added, was justified; and that leaves the way open for those who opposed the bondholders' plan to work out a new scheme of their own and present it to the various classes of security-holders. It was stated there need not be any approval of all groups before a plan can be submitted under the Dominion Companies' Creditors' Arrangement Act. Negotiations last year spread over many months and failed to produce such a situation. It appears that there is no certainty that anybody can get all security-holders to see alike, but it is not likely that any person will be willing to pass through the whole thing again.

### Newsprint Operations Down

Newsprint mill operations in Canada are now on a comparatively restricted basis, Abitibi having announced that it is now on what is equivalent to a three-day week. Consolidated, St. Lawrence, Price Brothers and others are understood to have adopted a policy of closing down machines in rotation so as to keep the rising overhead expenses down to a minimum and spread employment. Ontario Paper's new plant at Baie Comeau will operate on a short-time basis. A scheme is also being worked out whereby companies with their full output sold and in a position to make deliveries are being asked to give up tonnage in order to help less fortunate mills. The basis on which this tonnage is being distributed is understood to be displeasing to some of the mills in question—so much so that there has been some need of persuasion.

### Balancing Production of Newsprint a Problem

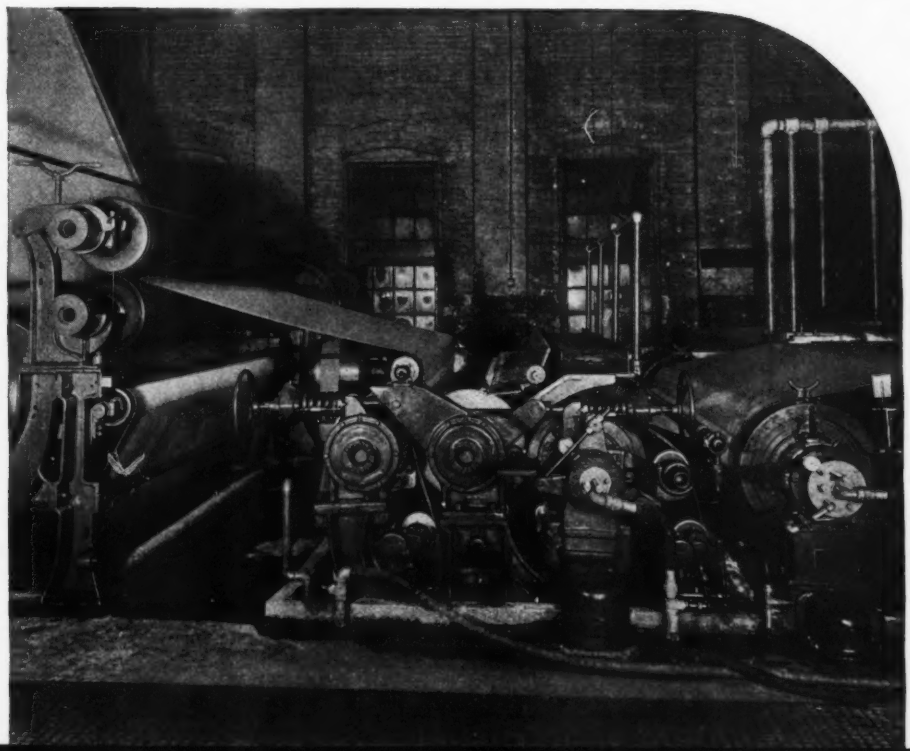
The Ontario and Quebec Governments have gone into the matter pretty thoroughly as the continued operation of the mills has an important bearing on the economic welfare of more than one community in the two provinces. It is understood that in the evening-off process neither Government is willing to make too much of a concession and the problem for the industry is to see that the available business is so distributed as to satisfy the Government. This latter problem is of no mean proportions, especially as it may mean the switching of tonnage from one province to another. Apparently it has to be done otherwise the industry might have difficulty in securing the continued support of the Ontario and Quebec Governments in working out their policies. The industry is tackling the immediate problem of liquidating the oversupply of newsprint. By itself it is not an insurmountable problem, as over the course of the next few months such stocks would be reduced to reasonable proportions, when the industry could again resume normal operations—normal at least in relation to consumption. As the situation now stands the industry may operate at 70 per cent of capacity for 1938 as a whole, but the first quarter will no doubt be a trying one. If conditions return to normal thereafter, earnings of the Canadian companies this year will compare favorably with those of 1937. If consumption fails to pick up, then a drop in earning power is to be expected, though probably not a serious one.

### Paper Box Industry Expanding

Commenting on the condition of the paper box industry in Canada, C. V. Hodder, secretary-manager of the Canadian Paper Box Manufacturers' Association says: "We were looking over the manufacturing figures we have up until the end of November, 1937, and on holding cartons we note a further increase in sales of approximately 11 per cent, and on set-up boxes about 10 per cent. We were rather interested in those figures, particularly those on set-up boxes, where there is a definite indication that the slide in production has stopped and is showing a trend the other way. Set-up boxes are still a long way from their peak of 1929 when the sale for the year amounted to $6,060,733. It is to be noted that in both folding and set-up the increases were determined at the beginning of the year.

### Moore Corp. Ltd. Reward Employes

In recognition of services performed in 1937, all employes of Moore Corporation, Limited, have received an extra week's salary. Payment was made to Canadian and American divisions, including Burt Business Forms, Limited.



# BELOIT HORIZONTAL *Dual Press*

PATENTS PENDING

## —A MAJOR STEP FORWARD

IMPROVED QUALITY OF PAPER

INCREASED PRODUCTION

GREAT SAVING IN FELTS

THE BELOIT WAY IS THE MODERN WAY

BELOIT IRON WORKS BELOIT WISCONSIN

# Financial News of Pulp and Paper Industry

## West Virginia Reports Net Profit of $2.13 Per Common Share—Celotex Corp. Approves Plan To Purchase Stock of Certain-teed Products—Whitaker Paper Earnings Equal $9.45 Per Share — Other Financial News.

### New York Stock Exchange

High, Low and Last for the Week Ending January 26, 1938

| | High | Low | Last |
|---|---|---|---|
| Armstrong Cork Co. | 38 | 34½ | 35 |
| Celotex Corp. | 22¼ | 21 | 21 |
| Celotex Corp., pf. | 57 | 56 | 56½ |
| Certain-Teed Products Corp. | 7⅞ | 6⅜ | 6¾ |
| Certain-Teed Products Corp., pf. | 29½ | 25 | 25½ |
| Champion Paper & Fibre Co. | 29½ | 28¾ | 28¾ |
| Champion Paper & Fibre Co., pf. | 104 | 104 | 104 |
| Congoleum-Nairn Co. | 24½ | 23 | 23 |
| Container Corp. of Amer. | 16⅜ | 14⅛ | 14¼ |
| Continental-Diamond Fibre Co. | 9½ | 8⅜ | 8⅜ |
| Crown-Zellerbach Co. | 11¼ | 9½ | 10 |
| Crown-Zellerbach Co., pf. | 69 | 68½ | 68½ |
| Flintkote Co. | 17¾ | 15¼ | 15⅝ |
| Robert Gair | 4⅝ | 4 | 4 |
| Robert Gair, pf. | 15½ | 15 | 15 |
| International Paper & Power | 8⅞ | 7⅛ | 7⅝ |
| International Paper & Power, pf. | 36⅜ | 31 | 31½ |
| Johns-Manville Corp. | 79¼ | 66½ | 69 |
| Johns-Manville Corp., pf. | 124 | 122 | 122 |
| MacAndrews & Forbes, pf. | 126 | 125 | 126 |
| Masonite Corp. | 34 | 29⅞ | 30½ |
| Mead Corp. | 14⅜ | 12⅜ | 12¾ |
| Mead Corp., pf. | 72 | 69 | 69 |
| Paraffine Companies, Inc. | 42 | 38½ | 38½ |
| Ruberoid Co. | 22 | 18½ | 18½ |
| Scott Paper Co. | 42 | 41 | 41½ |
| Sutherland Paper Co. | 20 | 18 | 18 |
| Union Bag & Paper Corp. | 11¾ | 9¾ | 10 |
| United Paperboard Co. | 5½ | 4½ | 4½ |
| U. S. Gypsum Co. | 67 | 58 | 60 |
| U. S. Gypsum Co., pf. | 166 | 164 | 164 |

### New York Curb Exchange

High, Low and Last for the Week Ending January 26, 1938

| | High | Low | Last |
|---|---|---|---|
| American Box Board Co. | 9⅜ | 9 | 9 |
| Brown Co., pf. | 26¼ | 26¼ | 26¼ |
| Great Northern Paper | 31 | 29¾ | 29¾ |
| St. Regis Paper Co. | 3⅞ | 3⅜ | 3⅜ |
| St. Regis Paper Co., pf. | 59 | 58 | 58 |
| Taggart Corp. | 5⅛ | 4¾ | 4¾ |

## West Virginia Increases Earnings

The West Virginia Pulp and Paper Company and subsidiaries, for the fiscal year ended on October 31, reported a net profit of $2,862,011 after depreciation, depletion, interest, loss on securities sold, provision for loss on miscellaneous investments, Federal income taxes and $189,602 provision for surtax on undistributed income. After preferred dividend payments the net profit is equivalent to $2.13 each on 902,432 shares of no-par common stock outstanding at close of the year, exclusive of 43,920 shares held in the treasury. A provision of $36,349 for loss on marketable securities was charged to the earned surplus account.

In the preceding year the company reported a profit of $1,904,834 after interest, loss on miscellaneous investments and property disposals, depreciation, depletion and Federal income taxes. After adding $329,422 of portion of provision charged against the income account in prior years for losses on marketable securities $2,234,256 profit was carried to the earned surplus account.

## Buys Certain-teed Stock

Stockholders of the Celotex Corporation approved last week in Chicago the acquisition from the Phoenix Securities Corporation of 9,496 preference and 109,360 common shares of the Certain-teed Products Corporation. The Phoenix Securities Corporation did not vote its stock, nor did the family of the Celotex company's president, which owns 27,000 shares. Of the other shares, 73,011 voted for and 19,779 against the proposal.

Also approved was an increase in authorized common stock from 750,000 to 1,500,000 shares.

Lee B. Ewing and John Irwin were elected directors to fill vacancies.

## Whitaker Paper Co. Earns $342,204

The Whitaker Paper Company, at the annual meeting, reported that the company's net income for 1937, after payment of taxes was $342,204, as against $144,030 in 1936. Earning per share on the common stock was $9.45 for 1937, as compared to $2.80 per share in 1936. The directors declared a regular quarterly dividend of $1.75 per share on the preferred stock, payable April 1, 1938, to stockholders of record at the close of business March 19, 1938. The directors also declared a dividend of $1.50 per share on the common stock to shareholders of record March 19, 1938, payable April 1, 1938.

## Fuller Box Co. Incorporates

[FROM OUR REGULAR CORRESPONDENT]

INDIANAPOLIS, Ind., January 24, 1938—Articles of incorporation have been filed with the Indiana secretary of state by the Fuller Box Company, Inc., Mentone, Ind., formed to manufacture containers and boxes of all descriptions. The corporation has 500 shares of capital stock valued at $10 a share and the incorporators are Collins F. Fuller, Furel R. Burns and Conda E. Walburn. Collins Fuller was named resident agent.

## Dodds Paper Stock Ltd. Chartered

[FROM OUR REGULAR CORRESPONDENT]

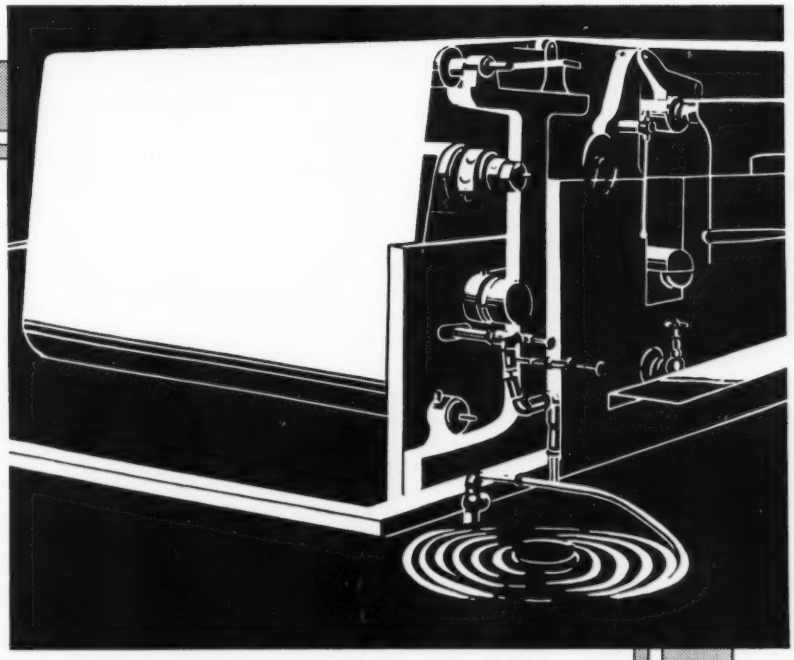
TORONTO, Ont., January 24, 1938—Dodds Paper Stock Limited has been granted a provincial charter with an authorized capital of $40,000 and head office in Kitchener, Ont. The company will buy, sell and deal in waste papers of all kinds. The incorporators of the company are Richard D. Dodds of Kitchener, W. S. Howard and J. P. Howard of Toronto.

## Box Concerns Consolidate

[FROM OUR REGULAR CORRESPONDENT]

WATERBURY, Conn., January 24, 1938 — The White & Wells Company, manufacturers of setup and folding paper boxes, one of the oldest concerns of its kind in the country, is reported to have consolidated with the Bridgeport Paper Box Company, Bridgeport, Conn., and is removing the best of the machinery to Bridgeport. The Waterbury plant will be closed.

# 28c a ton for wet-end felting



That, gentlemen, is real felting economy . . . and it's the Black-Clawson wet-end that is making it possible.

To many, 28c a ton will seem impossible, yet that figure was taken direct from the records of a large mid-western board mill. Most important, however, other Black-Clawson equipped mills are also slashing wet felting costs from ⅓ to ½.

Another feature of this record-breaking machine is the ability to influence the formation of the sheet. Mill after mill report that they are obtaining a substantial measure of control, not only machinewise, but crosswise as well.

It's been only a little over three years since the Black-Clawson super wet-end was introduced, yet the lists of user mills and stocks being formed the B-C way are indeed impressive. As in the cases of the vertical dryer, spiral drive, duplex cutter, and other Black-Clawson equipment, the efforts of Black-Clawson to build a wet-end capable of setting new cylinder machine standards have been well rewarded by general acceptance.

Write us if you have a paper production problem. Our engineers are at your disposal, without obligation, of course. The Black-Clawson Co., Hamilton, Ohio. Owners of Shartle Brothers, Middletown, Ohio.

BLACK-CLAWSON

# New England TAPPI Discusses South

The New England Section of the Technical Association of the Pulp and Paper Industry met at the Roger Smith Hotel, Holyoke, Mass., Friday evening, January 21, 1938. L. K. Burnett of Gair Thames Containers presided as Chairman.

The principal speaker was James A. Lee, managing editor of *Chemical and Metallurgical Engineering*, New York, N. Y., who talked on "The Development of the Southern Wood Pulp Industry." This paper will be published in full in the PAPER TRADE JOURNAL.

W. R. Steele of the Solvay Process Co., Syracuse, N. Y., discussed recent developments in bleaching processes of Southern sulphate pulp mills.

Those present included:

H. L. Thompson, Nashua River Paper Company, East Pepperell, Mass.; George S. Carroll, Monadnock Paper Mills, Bennington, N. H.; Frank Leonard, Marble-Nye Company, Providence, R. I.; D. J. Brown, Boston, Mass.; James J. Burns, Livingston Worsted Company, Holyoke, Mass.; N. M. Kennedy, Penick & Ford, New York City; Joseph J. Tobin, Livingston Worsted Company, Holyoke, Mass.; L. W. Crouse, Penick & Ford, Springfield, Mass.; B. G. Constantine, The Foxboro Company, Springfield, Mass.; R. J. Proctor, Fitchburg Paper Company, Fitchburg, Mass.; Edward C. Reid and Peter Freedman, American Writing Paper Corp., Holyoke, Mass.

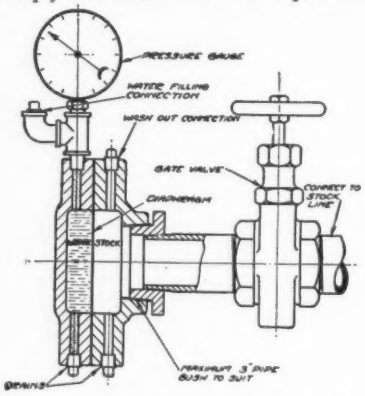
C. W. Damon, Fitchburg Paper Company, Fitchburg, Mass.; S. W. Blanchard, Wheelwright Div. Mead Corp., Leominster, Mass.; Helen U. Kiely, American Writing Paper Corp., Holyoke, Mass.; Arthur B. Green, Needham, Mass.; James A. Lee, *Chemical & Metallurgical Engineering*, New York City; L. K. Burnett, Robert Gair Company, New London, Conn.; W. R. Steele, The Solvey Process Company, Syracuse, N. Y.; W. O. Johnson, Westfield, Mass.; H. S. Leonard, Monsanto Chemical Company, Boston, Mass.; John M. McGarry, Crane & Co., Dalton, Mass.; R. G. Vaeth, Robert Gair Company, New London, Conn.; H. E. Crippen, Solvay Sales Corporation, Boston, Mass.

Arthur Coffin, Titanium Pigment Corporation, New York City; R. W. Pattison, American Writing Paper Corporation, Holyoke, Mass.; F. W. Schneider, Hampden Color & Chemical Company, Springfield, Mass.; Chas. P. Kirchen, General Electric Company, Pittsfield, Mass.; George Barnett, Judd Paper Company, Holyoke, Mass.; Con Stapley, Chemical Paper Company, Holyoke, Mass.; E. O. Reed, Crane & Co., Dalton, Mass.; Gordon Booth, Robert Gair Company, New London, Conn.; L. B. Tucker, Crane & Company, Dalton, Mass.; R. D. McCarron, Stein, Hall & Co., New York City; F. H. Lovenberg, George Mann & Company, Providence, R. I.; Charles P. Slocum, Corn Products Sales Company, Boston, Mass.

Vernon Woodside, The Mathieson Alkali Works, New York City; James P. Scobie, Mason-Neilan Regulator Company, Boston, Mass.; Lena E. Kelley and J. Edward Doyle, American Writing Paper Corporation, Holyoke, Mass.; James Fitzgerald and Charles Backus, Collins Manufacturing Company, N. Wilbraham, Mass.; W. J. Burke, General Dyestuff Corporation, Providence, R. I.; John P. Kennedy and John Ramsbottom, American Writing Paper Corporation, Holyoke, Mass.; Marion Lunn, Holyoke, Mass.; Fred Cassidy and Donald Young, American Writing Paper Corp., Holyoke, Mass; D. T. Achorn, Fitchburg Paper Company, Fitchburg, Mass.; R. G. Loomis, Case Bros. Inc., Burnside, Conn.; C. L. Reece, Whiting Paper Company, Holyoke, Mass.; William Anderson, Stevens Paper Co., Westfield, Mass.; A. J. DeCouagne, Holyoke, Mass.; John T. Leecock, Joseph H. Burgen, Frank Borlen and Thomas Flaherty, American Writing Paper Corporation, Holyoke, Mass.

## Stockline Diaphragm Gauge Connection

The measurement of pressures existing in pipe lines when handling water or other thin liquids means simply the attachment of a pressure gauge. When handling paper stock or other liquids containing materials of a fibrous nature, this method is not satisfactory because the fibrous material will quickly plug the opening into the gauge.




To overcome this difficulty, Goulds Pumps Inc., Seneca Falls, N. Y., have developed a "Stockline" Diaphragm Type Gauge Connection, which will give accurate readings of the pressure in such lines.

The Diaphragm Connection shown in the accompanying diagram, consists of two recessed circular flanges with a thin flexible diaphragm between them. One flange is tapped for 3 inch pipe connection, and can be attached through nipples and gate valve to the stockline or other pipe. There is a tee and filling connection between the outer flanged section and the pressure gauge.

In use, the space between the diaphragm and other flange section should be completely filled with water to avoid rupture of the diaphragm.

When the gate valve is opened, the pressure of the stock or other thick fibrous material acts on one side of the diaphragm, which transmits the pressure to the water on the opposite side, thus recording the exact pressure on the gauge without the material coming in contact with the fluid actuating the gauge. Exact pressure readings are thus obtained.

This Diaphragm Gauge Connection was developed about 5 years ago and has been used in a considerable number of tests on paper stock lines, both by ourselves when running tests for pressures and frictional resistance on stock lines, and also by customers.

# Management's Function in the Safety Program*

By G. W. Nicholson[1]

One of the most important industrial problems is the relationship between management and the workers. Such a relationship can be successful in the long run only if the dealings are frank and honest. The basic principle must be mutual confidence and respect. On this basis, safety work and safe working conditions become part of the functions of the management in the same manner as efficient operation is required of workmen. It becomes the duty of the management to train men in safe and efficient habits. A new worker follows the example of the older men and his foreman. Therefore, the training must be done largely by the foreman.

The top management must formulate the policies of the safety program, which it must also actively support to arouse sincere enthusiasm down through the supervisors to the employees. A wholesome, intelligent and friendly cooperation between the management and the employees is absolutely necessary to eliminate accidents. It is a matter of team work and joint responsibility.

The first step, and probably one of the most important is to select the new employees carefully. The qualifications of the employee will, of course, vary depending upon the industry. However, age, physical fitness as determined by medical examination, intelligence, clean living habits, background and previous record should be carefully investigated and considered. A great help in pointing out what is expected of the new employee, as far as safety is concerned, is to give him a safety rules booklet especially printed for this purpose. However, it should be very clearly understood by every foreman in the plant that he must take especial interest in every new man he puts to work. The new employee must be patiently instructed and kept under constant watch until the foreman is positively assured that the new worker is capable of performing his duties efficiently and safely. The new employee is definitely the foreman's particular responsibility.

Every Safety Program should include:—

1. Accident facts.
2. Elimination of hazards.
3. Safety program.
4. Creating a safety record.
5. Safety publicity.
6. First Aid.

## Accident Records

An accurate knowledge concerning how and where accidents happen, the nature of the injuries, sources of accidents, and the number of accidents occurring, is necessary to reduce accidents. A careful study of these facts should guide preventive efforts. Proper statistics should be kept so that conclusions may be drawn from them to guide the study of future accident causes and aid in reaching a decision as to the method of eliminating known causes.

All accidents should be investigated, particularly the lost time cases, either by the safety director or a committee consisting of department heads especially appointed for the purpose. The agency investigating the accident should have enough authority to call any witnesses, including the foreman of the department, and take whatever action may be required, whether the accident is due to neglect on the foreman's part, carelessness on the man's part, unsafe working conditions, or other cause. Proper records of such investigations should be filed.

Intensive educational work among employees is necessary to achieve a good safety record. The first step in educational activity must be to win the confidence and support of the employees. Every effort to remove hazards and improve mechanical safety in the plant indicates to the employees the sincerity with which the management regards the safety program. It is only through close supervision and continual carefulness by the employees that a no-accident record can be obtained. Rigid enforcement of every order issued will get results. Chance-taking, unnecessary haste, hazardous short cuts, and other unsafe practices are opening wedges for accidents and must not be permitted. Good housekeeping throughout the departments, strict enforcement of rules, constant watchfulness for laxity, regular and thorough inspection of all operations will bring to light the underlying causes of accidents assigned to man failure.

The management should take the lead in plant housekeeping by creating a spirit of orderliness and system through supervisors and foremen, and by generally insisting upon good housekeeping in all operations. Attractive grounds around the plant and a well kept up plant tend to encourage carefulness and neatness among the employees.

## Dependence on Foreman

The success of safety work depends very greatly upon the foreman, since a competent, protected working force depends largely upon his ability to lead and inspire confidence among those under his direction. The foreman can secure full co-operation of all employees more quickly by giving each man a definite responsibility than by presenting the safety program solely in the form of instructions and orders. The employees should have an active part in accident prevention work, develop enthusiasm and the feeling that the success of the program depends upon his individual efforts. It gives each worker an opportunity to accomplish something that the employer desires. He feels that it is a personal service, which gives him much pleasure.

The vast majority of industrial accidents are caused by man failure, which can only be controlled by supervision. Failure to issue and enforce instructions, inattention, poor discipline, improper and unsafe practices, and undue haste are conditions which cause accidents. The foreman must believe in accident prevention as sincerely as he would believe in

* Presented at the National Safety Congress in Kansas City, Mo., 1937.

[1] Production Mgr., Southern Kraft Corp., Panama City, Fla., and Georgetown, S. C.

anything else that would make him more valuable to his employer, and he should be interested in the welfare of every employee working under his supervision. He must exert every effort to protect the men, and he must be a leader who can secure the wholehearted support of the employees. If the foreman is indifferent, the workers will be indifferent. He must be a leader, and the sincerity with which he performs his part in the Safety Program will be reflected in the co-operation he receives from the workers.

**Stimulus for Interest**

Special safety campaigns or contests between the departments will create and maintain interest in the safety work. An attractively arranged bulletin board showing the record of accidents in the various departments, daily, weekly, monthly, as well as yearly, is of great assistance in creating and keeping up interest in safety work.

Bulletin boards containing displays of safety posters, notices of contests, letters from the management are effective in keeping safety before the employees.

Another splendid aid in safety work in a plant is the suggestion box planted at different locations where the men can drop their suggestions. Suggestions should be examined and decided upon by either the safety director or the safety committee especially appointed for the purpose. It is very important that suggestions are not neglected or put off, but should be carried out promptly. To spur further interest among the employees suggestions for safety slogans are of great value. Slogans should be renewed on suitable sign boards every month, and it is very important that the name of the employee who suggested the slogan be mentioned. Furthermore a suitable prize, such as a textbook pertaining to the industry, is very helpful.

Another useful agency for safety work is an employees' committee whose meetings should be attended from time to time by a representative of the management who will give a short talk.

One of the important features in any safety organization is the first aid department, which should be well and efficiently managed. The nurse in charge should keep physical examination records locked up, so that the employee can be assured that these records are known only to the doctor and the nurse in charge. She should also keep an accurate card system pertaining to employees' first aid treatment. The nurse should also keep weekly, monthly, as well as yearly statistics which should be posted, as well as sent to department heads. All injuries, no matter how small, should be reported immediately and treated by the nurse on duty.

First aid facilities provided for employees create a feeling of protection, and employees respond to safety activities much more whole-heartedly, as they feel that the employer is doing his part.

The nurse in charge of first aid should keep in close touch with the various safety agencies in the plant, whether the safety director, the safety council, employees' committee or management. All serious accidents should be closely followed up in the form of visits by the nurse in charge, as well as the superintendent and foreman to the hospital, and in certain cases later on also in the home. If a serious accident has happened, it is very important that special interest be taken in such a case and that the man is put to work as soon as possible, although it may be only light work; and the man should be given such a position that he can maintain the same earning capacity as he had before the accident, if possible.

Another important agency in the safety program is the resuscitation team. Training in resuscitation should be given continuously, so that in due time a great number of men around the plant can carry out such work whenever required.

## The Production Year Book

The famous Munder Paper Chart, prepared by Norman T. A. Munder, dean of American printers, has been revised and brought up-to-date and appears in the current edition of the "Advertising and Publishing Production Yearbook" just published by Colton Press, 114 East 32nd street, New York. This lists 518 brands of standard book and cover papers made by 64 leading mills classified according to price range and kinds of paper.

Other articles pertaining to paper and allied products include: "Hints on Choosing Printing Paper", by William Bond Wheelwright; "Formulas for Paper Weights in Sheets and Rolls"; Tables on Bulk, Basis Weight and Cutting of Paper; "A Printer's Notes on Paper", by Norman T. A. Munder; "Hand-Made Papers", by Thomas N. Fairbanks; "Native Papers of Japan", by Harrison Elliott; chart of 11 principal finishes in book papers; Automatic Paper Calculator—number of sheets of proper size required for 24 standard book sizes of from four to 64 pages, weight and stock involved and best cut for cover; 34 commercial envelope styles illustrated and 116 styles described; etc.

Also appearing in the book are detailed analysis of every known reproduction technique—letterpress, planagrophic and intaglio. A comparative process chart gives the approximate minimum and maximum impressions economically secured from all kinds of printing plates—factors affecting the length of life; smallest and largest sheet-size accommodated by presses for from one to five colors run at a time.

The volume consists of advertising and production data boiled down for easy reference in charts, tables and short articles by many authorities in the graphic arts—edited and cross-indexed for speedy finding of answers to production problems. Index tabs divide the book into eight sections; Art and Photography; Bookmaking and Binding; Engraving and Electrotyping; Paper and Ink; Printing Processes; Production Data; Typography; an Index.

More than a thousand printing type faces, available in some 8,000 different sizes and all in current use have been compiled for the first time in this volume. This is considered the largest collection of different type specimens ever assembled, according to the publishers.

Another feature is the handy estimating section by which the approximate cost of any printing or direct mail job may be quickly ascertained; an exposition of the new ratio scale in photo-engraving, and 100 hints on saving money in buying printing. There are more than 100 pages of outstanding examples of fine color printing.

The volume is published by Leo H. Joachim, edited by Eugene M. Ettenberg, and issued this week by Colton Press, 114 East 32nd street, New York. It comprises 500 pages, over 600 illustrations, with page size 8½ x 11, weighs 7½ lbs. and is priced at $5.00.

# Constant Speed By Electronic Regulator

An interesting installation of a modern paper machine drive is in operation at the plant of the Downingtown Paper Company at Downington, Pa. The mill is the fourth unit of a four-machine plant, and is electrically driven throughout. The other three mills are almost entirely steam engine driven. This modern electrically driven mill will eventually afford an excellent opportunity to observe the comparative performance, reliability, and cost of the two systems.

In mill No. 4, as the new unit is called, there is installed a 129 inch Black-Clawson machine, operating over a speed range of 50 to 200 F.P.M. The pulp preparation equipment includes two Shartles Brothers pulper refiners and two jordans. These latter units are driven by synchronous motors while the balance of the auxiliary equipment such as pumps, screen, etc., are driven by induction motors so applied as to give a good overall power factor for the mill.

Power is supplied to the mill at 33,000 volts and is stepped down through an outdoor substation to 440 volts. A complete switchboard in an especially built stone switchhouse distributes the power at 440 volts to the various feeders in the new mill and at 110 volts distributes to the lighting circuits through no-fuze De-ion circuit breakers.

The paper machine itself is powered by a single motor drive under the control of an electronic regulator. The single motor of this drive is variable voltage, direct current and gets its power from a 150 kw. synchronous motor generator set, the generator of which is separately excited. By varying the output voltage of the generator the speed of the main driving motor is controlled through the entire speed range of 50 to 200 F.P.M. paper speed. The main driving motor is direct connected to the variable speed lineshaft through an enclosed speed reducer.

The speed of the machine is kept absolutely constant for any predetermined paper speed by means of the electronic regulator. Since this regulator makes use of electronic principles, it is infinitely faster than conventional mechanically actuated regulator heretofore used for this service. A testing circuit is provided in the regulator housing for keeping an accurate check on the condition of the tubes over each weekend shut-down.

All manipulation of the paper machine speed is done from the front of the machine by means of push button station. The motor operated rheostat which is actuated by these push buttons is especially designed to give approximately equal percentage of speed change for each position. Since there are over 100 steps in the rheostat, each change in speed from one step to the next is less than 1 per cent of the range, whether operating at 50 feet or 200 F.P.M.

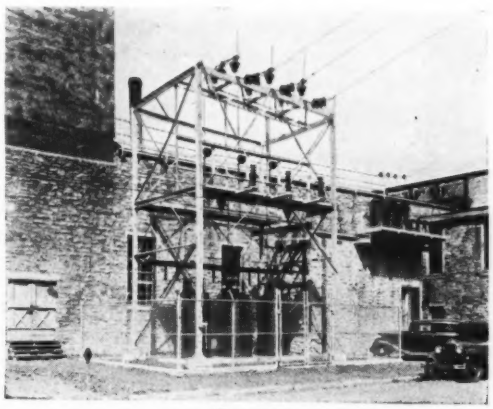


FIG. 1.
View of outdoor substation showing switchboard house in right background.

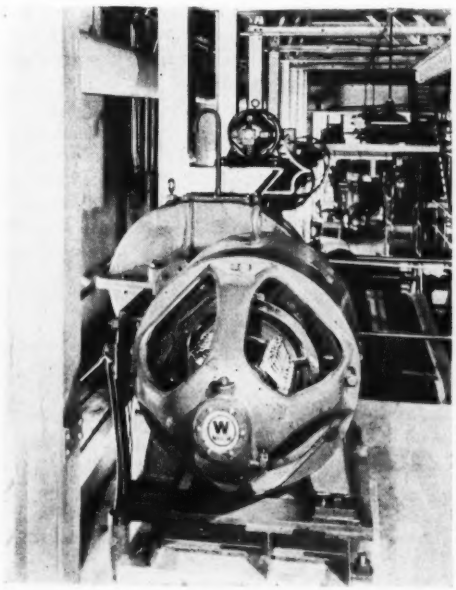


FIG. 2.
Variable speed motor and gear unit coupled to variable speed lineshaft showing pilot generator.

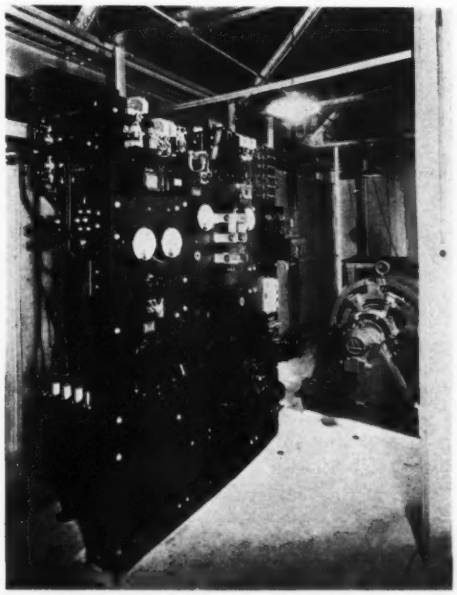


FIG. 3.
Main paper machine control with electronic regulator mounted on the right hand panel. Main motor generator set is on the right.

# New Book Is Epic of Electrified America

Twenty of the nation's leaders pooled their memories today to tell the story of an epic battle that brought electricity into 22,000,000 American homes and paved the way for a giant industry. Their story —the life history of George Westinghouse—is now told in a book published by the American Society of Mechanical Engineers, a book that goes back half a century in the saga of the New World.

In a literal sense, the book tells the story of electricity itself; for the author-editor, Charles F. Scott, professor emeritus of electrical engineering at Yale University, and most of his co-writers, were eyewitnesses not only of the struggle for the alternating current system, but of the coming of the modern high speed steam turbine, the air-brake, the improved transformer, the air-spring, the electric railway and a hundred other engineering feats associated with the name Westinghouse.

Bearing witness to these successes is an imposing list of co-authors which includes: Dr. James R. Angell, retiring president of Yale University; Paul D. Cravath; W. L. Batt and Ambrose Swasey, past presidents of the A.S.M.E.; Ralph Budd, President of the Burlington Lines; A. W. Berresford and L. B. Stillwell, past presidents of the A.I.E.E.; Frank W. Smith, president of the Consolidated Edison Company; S. M. Vauclain, chairman of the Baldwin Locomotive Works; and J. V. B. Duer, chief electrical engineer, Pennsylvania Railroad.

To Dr. Scott, who joined the Westinghouse organization in 1888 "the old man" was a genius whose greatest gift was the ability to see and utilize broad new principles, in a day when inventors were busy perfecting gadgets to run on old principles.

But George Westinghouse was no "old man" when he invented the air-brake. He was not much more than twenty when he came across a magazine article telling of a compressed air drill. For some time he had been searching for a solution to the problem of hand braking the cars of a train. The principle of the air drill seemed to supply the solution.

Immediately Westinghouse set to work, and in April, 1869, he persuaded the Pennsylvania Railroad to test a compressed air-brake installation on a trial run. The train had gone but a few hundred yards when a huckster's wagon cut across the track. A skeptical engineer applied the new brakes just in time to avert disaster.

Freight trains as late as the early '80s were limited to thirty cars and maximum speeds of fifteen miles an hour; Westinghouse made possible today's trains of 150 to 200 cars, traveling at more than fifty miles an hour. A generation later the inventor was well established as a mechanical engineer; but he still knew very little about electricity. Stanley and Shallenberger had just come to him, and with them came tales of a new thing in Europe called alternating current, by means of which high voltage could be transmitted over great distances.

The one difficulty was that these high voltages were too powerful to hitch to motors and lamps. To Westinghouse, the problem seemed analogous to one he had conquered with his reducing valve for high-pressure natural gas. Two Europeans, Gaulard and Gibbs, already had developed a crude "transformer" for stepping electrical energy up or down. In 1885 Westinghouse brought the Gaulard and Gibbs transformer to America, and three weeks after he first saw it, he designed an improved lathe-wound device which has been the standard ever since.

A decade later, Westinghouse, who in his 'teens had developed a rotary steam engine, heard of a steam turbine, the design of an Englishman named Parsons. At that time the turbine was scoffed at in England and entirely unknown elsewhere, but it took Westinghouse twenty minutes to make up his mind to bring it to America.

In the same decade came electrification of the railroads, and, with the advent of the electric trolley-car, a story Dr. Scott cites as typical of the man about whom he writes: Work on street railway electrification being hampered by the fact that patents on the familiar overhead trolley wheel were held elsewhere, Westinghouse turned to Dr. Frank Conrad, who was later to be known as the "father of radio broadcasting."

"Do something," he said.

Within a few days Conrad had devised the pantagraph type overhead conductor now so familiar on the streets and railway lines of every country in the world. There were other inventions to follow, for Westinghouse held more than three hundred patents when he died, and Conrad holds two hundred in his own right. But Dr. Scott closes his book on a timely though less familiar theme.

In the field of industrial relations, George Westinghouse was, the author says, as far ahead of the pack as he remained in the scientific and inventive spheres. In 1881 he established the five-and-a-half-day week. A few years later he organized free technical day and night schools for employees. In 1907 he established the Relief Department which ever since has filled pay envelopes of the sick and disabled. Before the World War he had set up collective bargaining and retirement pension systems in his shops.

To the day he died, March 12, 1934, George Westinghouse held the respect of his men. And although he came to be the employer of tens of thousands of skilled craftsmen, everyone of them knew, as Mark Sullivan remarks in "Our Times," "that 'the old man' could take his tools and beat him at his own job."

A copy of this new 80-page book will be sent to any readers of the PAPER TRADE JOURNAL on request to the Westinghouse Electric and Manufacturing Company as long as the supply lasts.

## Oscar H. Ogren Appointed Salesman

The Minnesota and Ontario Paper Company announces that Oscar H. Ogren has been appointed salesman in the Midwestern trade territory. For several years Mr. Ogren was with the production department at the mills at International Falls, Minn., and Fort Frances, Ont., and for the past four years he has acted as chief clerk of the sales department. Mr. Ogren's long experience in both production and sales qualifies him as a capable representative, calling regularly on the merchant trade.

## Indianapolis Inquiries Increase

INDIANAPOLIS, Ind., January 24, 1938. — The increasing number of inquiries led to the belief that there is some activity in sight for the first half of February. Inquiries seemed particularly active in the fine paper field, noticeably for book papers.

The past week saw the fine paper lines being sold strictly on a hand to mouth basis. Inventories are very low and if any buying is done in the immediate future, it likely will be only enough so that stocks again can be lowered by March 1, which is the annual assessment period in the state. Jobbers and dealers want low stocks at that time so they will not have to be taxed so heavily. Prices on fine papers are holding their own and there is no indication of change.

Demand for wrappers and bags is only fair. Dealers report a recession of business and in the wrapping paper field this is reflected back on the jobbers. Tissues seem in fair demand with indications of an increase during the next fortnight.

The container field, which has been in a slump since the holiday business was cleaned up, is gradually expanding, though volume of production is considerably below this time a year ago. Word that several thousand automobile workers would be put back to work in the state has caused the accessory men to increase their production somewhat and their demand for containers has increased. The demand from textiles anl the hardware trade continues poor.

Building paper exhibitors at the annual convention last week of the Indiana Lumber and Builders' Supply Association, report that they did some business and that the outlook is rather promising.

Little demand was seen last week for paper stock or rags and prices are at a low level.

## Norwegian Pulp Industry Prospers

Conditions in the Norwegian pulp and paper industry continued favorable during the first 9 months of 1937. The usual seasonal dullness was experienced during July and August but demand picked up during September. Buyers have been cautious following the slump in commodity markets and stock exchanges and sales of wood pulp have been restricted. Production has been curtailed to some extent owing to difficult water conditions and acute shortage of supplies during the third quarter. The statistical situation in the industry is favorable and since the Scandinavian cartel agreement for mechanical pulp has recently been extended for three years, exporters are in a position to regulate the market very effectively.

Newsprint prices rose rapidly during the summer months, but only a limited amount of the 1937 production has benefited. The hostilities in China have also had an adverse effect on the market for paper because of the impossibility of fulfilling Chinese contracts.

It is estimated that the output of sulphite pulp during 1937 reached approximately 480,000 metric tons, of which about 100,000 tons were retained for domestic paper production. The quantity available for export was about 330,000 tons. Production figures for 1937 are not available, but since nearly 90 per cent of the Norwegian output of paper and pulp is normally shipped abroad, the export statistics give a fairly accurate indication of production.

## Close Case Against Seminole Paper Corp.

WASHINGTON, D. C., January 19, 1938.—The Federal Trade Commission has issued an order closing a case growing out of a complaint issued in November, 1936, against Seminole Paper Corporation, 111 West Washington street, Chicago.

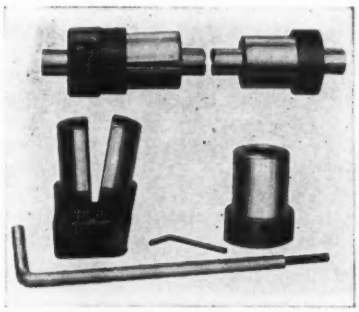
The complaint alleged that the Seminole corporation violated Section 5 of the Federal Trade Commission Act by employing a merchandising policy whereby it maintained suggested minimum resale prices for Seminole Tissue, a toilet paper product.

In closing its case, the Commission points out that the testimony and evidence in this proceeding appear insufficient to support the complaint's allegations respecting sales into the District of Columbia for resale therein, or sales into States not having statutes legalizing minimum resale price contracts or agreements.

The order points out that the Tydings-Miller Act, approved August 17, 1937, provides that nothing therein contained shall render illegal any contracts or agreements prescribing minimum prices for resale of a commodity which bears, or the label or container of which bears the trade-mark, brand or name of the producer or distributor of such commodity, and which is in free and open competition with commodities of the same general class produced or distributed by others, when that type of contracts or agreements are lawful as applied to intrastate transactions under the laws or public policy of any State in which such resale is to be made, or to which the commodity is to be transported for such resale.

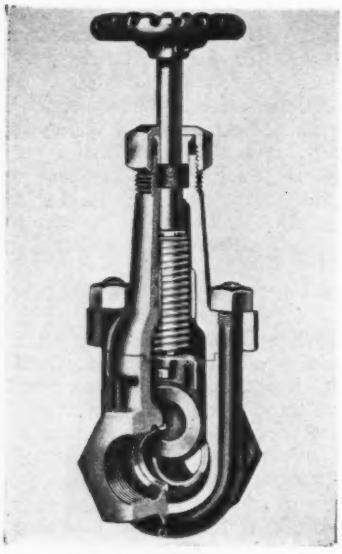
## New Jumbo Roll Cone Collar

An improvement over the ordinary jumbo roll cone collar used to lock jumbo rolls onto shafts is announced by Paper Converting Machine Company, Green Bay, Wisconsin. This appliance is called Jumbo Roll Expanding Chuck, and as illustrated here is made for 3 inch cores and made to fit roll shafts from $1\frac{3}{16}$ inch in diameter up to larger sizes. A description of this expanding chuck states that it is applied without effort, and that there is no pounding of the chuck to make it fit. A turn or two with a standard wrench tightens the chuck, which stays tight until released with a wrench. Since pounding of the chuck to make it fit the core is eliminated, there are no cracked cores or spoiled paper, and the cores after use are as good as new. There is no taper to this expanding chuck which has positive tension so that when tightened it is always the same and stays tight. Another advantage is that it is safe to operate; there are no projecting screws to pick up paper or become a hazard to workers. Its initial cost is low; a description of it states that it will last for years, and aside from its other advantages its use pays for it in labor savings alone.



## Improved Fairbanks Valve

Designed for 150 pounds steam working pressure and 225 pounds gas and liquid pressure, the new Fairbanks U-bolt gate valves are intended to meet the demand for an extremely rugged valve at a low cost. In addition to the chemical, gas and petroleum for the exacting industries, it is especially adapted service which the paper industry requires, as well as for ordinary steam, water and air lines.



SECTIONAL VIEW

Made in sizes from one-half to four inches, the new valve is simple in design, with but a few parts which can be taken apart, inspected and cleaned with relatively small effort and time.

Fairbanks U-bolt gate valves have many unusual features including the following:—

The relief slots in threaded bonnet bushing permit drainage back into the body chamber, thus eliminating the possibility of freezing or of clogging above the bonnet threads.

The protected top seat above stem threads makes a tight joint with the large seat under the stuffing box. The valve can be repacked under pressure when fully open without leakage. In addition, it prevents sediment from reaching and scoring the seating surface.

The U-bolt locks the body and bonnet firmly together, making a pressure tight joint and adding strength to the body. By removing only two nuts the valve can be disassembled.

Of the horse-shoe type, the stem and wedge assembly provide extra strength and lifting surface.

The double-taper wedge with knife edge at the bottom cuts through heavy fluids or sediment. Foreign matter is forced from the bottom of the wedge chamber where it can flow through the line. When fully open the wedge is above flow.

Body and bonnet are made of well proportioned and uniform thickness chrome-nickel alloy high-test iron or semi-steel having an average tensile strength of 40,000 pounds per square inch.

The office of the Fairbanks Company is located at 393 Lafayette street, New York City.

## A.C.M. Clay Coated Folding Boards

The American Coating Mills, Inc., of Elkhart, Ind., have just distributed to the trade a new modern stock booklet showing printed samples of their A.C.M. clay coated folding box board. This book is said to be the most complete sample book ever issued in the clay coated boxboard industry, and they are to be complimented on the attractiveness of the manner in which the samples are printed and displayed.

These samples are divided into two groups; one set of samples consisting of clay coated one side with a manila back, not embossed, and the other set of samples is embossed in alligator pattern with manila back. The samples consist of fourteen different stock colors and also gold, silver and white.

These clay coated folding boxboards are manufactured by the A.C.M. Patented Continuous process direct from the paper board machines to the clay coating machines. This mill operates exclusively in the manufacture of clay coated folding boxboards, and besides making the various colors shown in this sample book they also make to order special grades for various requirements of the printing trade, such as, letter-press, half-tone, offset lithography, spirit and press varnish, gloss inks and lacquers; also special grades of paperboards are made to order, such as, counterfeit-proof, grease-resistant, moisture-proof and embossed boards.

A copy of this very attractive sample book will be sent by the mill, or by their New York or Chicago offices, free of charge, to anyone interested in this product.

## Illuminated Magnifier

Under the new trade name of "Doo-More-Scope" a new illuminated magnifier has appeared on the market. It contains a 20 to 26 diopter lens system in a chromium plated cylinder, mounted in the housing on threads to bring the object on which the housing may be placed, into clear focus. The field of view is from ¼ to 1¼ inches. Inside the housing is a 6.3 volt Mazda lamp for standard voltages of 105 to 125AC or DC, and from 210 to 250 volts AC or DC. Eight feet of special resistor cord and a plug are supplied for connection to the power source, and a removable eyepiece for Spot-magnification. The list price is $5.

THE "DOO-MORE-SCOPE"

With magnification of 5X or 6½X, "Doo-More-Scope" is suitable for severe inspection of faulty textures, films, fabrics, small prints, maps, identification marks, pictures, engravings, scribed lines and layout work, as well as for machines and removal of foreign parts from eyes, hand or otherwise. It serves well wherever it is put to work: in the shop, the office or engineering department. Overall dimensions are about 3½ inches in length, 1¾ inches in width, and 2½ inches in height of housing.

## Paper Merchants Meet at Reading

Paper houses in Central and Eastern Pennsylvania, distributing both fine and wrapping paper lines held a dinner meeting, January 19, at the Abraham Lincoln Hotel, Reading. The special purpose was to consider further and complete the plans which have been worked on in collaboration with the office of The National Paper Trade Association for a strong, coherent organization which can lend its support and cooperation as a constituent of the National and, at the same time, serve the needs of the territory represented.

R. M. Hughes, general manager of Megargee Brothers, Scranton, presided. He has acted as temporary chairman of this group and has unselfishly devoted much time and personal effort to the promotion of the plan. After outlining in a comprehensive talk the progress that had been made, he called on F. T. Jamison, vice-president of the National, together with C. A. Spaulding and J. H. Londergan of the National staff, each of whom presented interesting information in regard to various phases of the National work and answered the questions of the merchants present regarding the statistical and other service provided by the National and the various projects and activities in which it is engaged.

Chairman Hughes quoted the opinions of several merchants who were unable to attend the meeting with encouraging expressions from adjacent associations whose cooperation might be expected in meeting overlapping problems, after which it was definitely decided to go forward with the organization.

It was recommended that local meetings should be held promptly in three areas: One covering Harrisburg, Reading, York and Lancaster, another for Allentown, Bethlehem and Easton, and the third for the Anthracite Region, including Wilkes-Barre, Pittston, Scranton, Wyoming, Williamsport and Sunbury.

Immediately thereafter, it was agreed that a combined meeting should be called for the election of officers and delegates to the National Association Fine and Wrapping Divisions, at which time By-Laws should be adopted and a definite program developed. Meantime, in view of the action taken, Vice-President Jamison, on behalf of the National Paper Trade Association, invited the merchants present to attend the 35th Annual Convention to be held at the Waldorf in New York City, February 21-23.

The next meeting will be held at the call of Chairman Hughes in accordance with the above program.

## To Be Turned Over to F. T. C.

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., January 26, 1938. — The investigation of the newsprint industry which has been going on for some months at the Department of Justice is just about to be turned over to the Federal Trade Commission it is understood on good authority.

It is said that the department wants the commission to ascertain if the old Mead decree is being lived up to. Officials of neither of the bodies are very communicative about the matter at this time.

## Garrett-Buchanan Hold Annual Meeting

[FROM OUR REGULAR CORRESPONDENT]

PHILADELPHIA, Pa., January 24, 1938. — The Garrett-Buchanan Company of Philadelphia, Reading and Baltimore, held their annual stockholders' meeting during the month in the Philadelphia office, 12 South Sixth street. The following directors were elected to serve for a period of one year: Morgan H. Thomas, George W. Weaver, A. K. Thomas, C. R. Smith and J. E. Thomas. At the close of the stockholders' meeting, the directors elected the following officers: Morgan H. Thomas, president; George W. Weaver, vice-president and manager; Frank H. Seltzer, vice-president and assistant manager; C. Raymond Smith, vice-president; J. Elwood Thomas, treasurer; Joseph H. Miller, secretary; W. Harvey VanAken, assistant treasurer; John R. Kohl, assistant treasurer; Joseph H. Weaver, vice-president; John S. Heverly, vice-president; Edward J. Beale, vice-president, and John F. Green, vice-president.

The Garrett-Buchanan Company is inaugurating what is known as a "Cover Show." A sample book of covers has been assembled, known as the Cover Selector; this contains 306 different shades of cover arranged in such a manner that it enables the advertiser to match copy almost at a glance, and should prove of great service to advertising agencies and others who prepare advertising copy.

"Consistent mailing to our trade" says newly elected vice-president and assistant manager, Frank H. Seltzer, "containing helpful hints in the use of covers will take place over a period of twelve months."

## Appointed by Paper Manufacturers Co.

[FROM OUR REGULAR CORRESPONDENT]

PHILADELPHIA, Pa., January 24, 1938. — Announcement has been made by Paper Manufacturers Company, Inc., of the appointment of Ernest S. Reid, 140 Federal street, Boston, as New England Sales Representative. Associated with Mr. Reid will be his son, Robert S. Reid. The complete line of products manufactured by the company will be available through Mr. Reid, and included among these will be Perfection Brand of flat gummed papers; Kraftweld gummed sealing tape, Perfection adding machine rolls and cash register rolls.

The company recently issued a folder on Perfection gummed plated papers, which shows the glowing colors and coated printing surface for producing fine printing effects, particularly for labels and seals, full details of which were printed in the PAPER TRADE JOURNAL a few weeks ago.

## Satterthwaite-Cobaugh in New Quarters

[FROM OUR REGULAR CORRESPONDENT]

PHILADELPHIA, Pa., January 24, 1938. — Satterthwaite-Cobaugh Company has moved from 22nd & Market streets, and are now located at 710 South Washington Square. Said Mr. Satterthwaite: "We're ready—ready in every sense of the word. All stock is now in our new quarters and we are ready for your orders . . . ready to greet old friends and new. To you, who have played such an important part in the growth of this business, we offer our sincere thanks and promise to merit your further confidence."

# Obituary

### Charles L. Wagner

Charles Linden Wagner, chemical engineer of 70 Springhill avenue, Randall Manor, Staten Island, N. Y., died January 21 at the Presbyterian Hospital, New York City, after an operation.

Mr. Wagner was born in Palmer, Ohio, and was graduated from the University of Michigan in 1897. From 1897-98 he was assistant in the department of chemistry at Western Reserve University. From 1898-1908 he was chemical engineer with the Kilby Company, beet sugar manufacturers of Michigan. From 1908-11 he served as chemist with the South Porto Rico Sugar Company and as general superintendent of the San Benito Sugar Company, San Benito, Tex., from 1911-14. From 1914-15 he filled the position of chemical engineer with the Dyro Company, Cleveland, Ohio.

During the World War Mr. Wagner served in the chemical warfare service of the U. S. Army. In 1919-25 he was consulting engineer for fifteen months with the West Virginia Pulp and Paper Company. In 1925-35 Mr. Wagner became associated with the J. O. Ross Engineering Corporation, New York, to head a department for engineering and the installation of chemical recovery plants with soda and sulphate pulp mills. In 1935-37 he was consulting engineer with the U.S.S.R. Paper Trust, with headquarters in Moscow, Russia. For the past few months he had been consulting engineer with an office at 122 East 42d street, New York, being associated with the Paper and Industrial Appliances, Inc.

Mr. Wagner was a widely known expert on evaporation, heat and chemical recovery processes. During his association with the paper industry the first commercial recovery system of the so-called spray type was made under his direction, followed by similar installations in pulp mills in this country. The Wagner spray type of furnace is now being installed in all new pulp mills and in many of the older plants.

Surviving, are his widow, a son and a daughter. Interment was private.

## Frank Culligan Heads Fort Edward Local

[FROM OUR REGULAR CORRESPONDENT]

FORT EDWARD, N. Y., January 24, 1938. — Frank Culligan was elected president of the local branch of the International Brotherhood of Pulp Sulphite and Paper Mill Workers at the annual meeting last week. Other officials elected include Fred Dill, vice president; John Culligan, financial secretary; Ralph Rooke, corresponding secretary; Neil Haley, treasurer; Frank Culligan, Herbert Washburn and Albert Veile, grievance committee.

## Robert Gair Co. to Buy Kraft Pulp

Under a revised agreement between the Robert Gair Company and the North Carolina Pulp Company, a subsidiary of the Kieckhefer Container Company, Gair will buy 15,000 tons of kraft pulp annually from the subsidiary. Gair has an $800,000 interest in the mill, for which it holds notes which are convertible into preferred stock.

## Ross Supertherm System

The January issue of *Power* carries a feature story entitled "Superheated Water" describing the Ross Supertherm System for process heat which has been installed in the new General Electric Company's plastic plant at Pittsfield, Mass.

The interest which this system, selected for the world's largest plastics plant, has created throughout the engineering circles prompted the editors to visit the plant, and as a result of their inspection they refer to it as "a revolutionary method in process heating" and one which will likely be applicable in a number of other major industries, including the paper industry.

According to the article, this new Supertherm System is effecting a fuel saving of about 30 per cent and is providing other major advantages and economies. Its novel feature, of course, is not merely the use of hot water, but its use at temperatures above 212 degs. F.

This Supertherm System which is acclaimed as "a revolution in process heat" is being built and installed by the J. O. Ross Engineering Corporation who are well known throughout the paper industry.

## Hold Panel Conference With Labor Men

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., January 26, 1938.—What is known as a panel conference was held last week with representatives of the paper industry by the Public Contract Board at the Department of Labor which has charge of the enactment of the Walsh-Healy act dealing with supplies furnished to the government.

These so-called panel conferences are generally preliminary to hearings which are held following which minimum wages are set in various industries which must be adhered to when supplies are furnished to the various government departments. No date has been set for hearings in connection with paper wages. Last week's conference was in executive session.

## Wrenn Paper Co. Gets Contract

[FROM OUR REGULAR CORRESPONDENT]

DAYTON, Ohio, January 24, 1938—The Wren Paper Company of Middletown, Ohio, today received approval from the labor department on a government contract to the extent of $35,000.

The Wrenn company was listed as participating with three other firms in a $35,264 contract arranged by the Graham Paper Company, of St. Louis, with the Government Printing Office for paper shipments to be delivered the latter part of January.

The labor department announced approval under the Walsh-Healey Labor Contracts Act requiring the firms bidding on United States government's contracts to abide by the provisions therein affecting wages and hours for labor.

## Not Now Employed by Standard

Standard Paper Manufacturing Company, Richmond, Va., wishes to advise the trade in general, and their friends in particular, that Mr. Richard H. Ashby, who was formerly their Chicago representative, has not been in the employ of the company for over three years.

# CONSTRUCTION NEWS

***A Summary of Vital Facts Regarding Construction, Financing and Operation of Pulp and Paper Mills***

## General Construction News

**Niles, Ohio**—The National Gypsum Company, 190 Delaware avenue, Buffalo, N. Y., manufacturer of wall board, insulating board and kindred products, has plans nearing completion for new addition to branch plant at Niles, to be one-story, primarily for expansion in storage and distributing department. A one-story train shed also will be built. Entire project is reported to cost close to $40,000, with equipment. Keich & O'Brien, Union Savings & Bank Building, Warren, Ohio, are architects.

**New York, N. Y.**—H. Lemberger, Inc., 339 West 13th street, manufacturer of paper boxes and containers, has arranged for lease of main floor and basement in building at 257 West Seventeenth street, totaling about 22,000 square feet of floor space, and will occupy for plant. Present factory will be removel to new location in near future, when space has been made ready for occupancy, and capacity increased.

**Fall River, Mass.**—The E. J. Cox Paper Company, 111 Harrison street, commercial paper products, has begun erection of new one-story and basement addition to storage and distributing plant, for which general contract has been let to James T. Sampson & Sons, 280 New Boston road, Fall River, as previously noted in these colums. New unit is estimated to cost close to $50,000, with equipment, and will be pushed to early completion.

**Brooklyn, N. Y.**—The Bright Paper Box Company, Inc., recently organized with capital of $20,000, plans operation of a local plant for the manufacture of paper boxes and containers of various kinds. New Company is represented by the Continental Lawyers Albany Service, 305 Broadway, New York.

**Charlotte, N. C.**—The Hudson Silk Hosiery Company, North Brevard street, will carry out expansion at mill for the manufacture of paper boxes for packing and shipping of company products, and has arranged for the installation of considerable new equipment for this purpose to develop large capacity. The department will represent an investment of about $25,000, and is scheduled for operation at early date.

**Chicago, Ill.**—The International Tag and Salesbook Company, 134 South La Salle street, has been organized with capital of 2900 shares of stock, to manufacture paper specialties of various kinds. New company will take over and succeed to the concern of same name, with local headquarters at 319 North Whipple street.

**Chicago Heights, Ill.**—The Gold Seal Asphalt Roofing Company, 50 Lowry avenue, North, Minneapolis, Minn., manufacturer of composition paper and asphalt roll roofing, has work under way on new plant on State street, near the city limits of Chicago Heights, for which general erection contract has been let to the Chicago Heights Company, 1530 Halsted street, Chicago Heights, as previously noted in these columns. It is proposed to have plant ready for occupancy at early date. It will consist of a series of five one-story buildings, reported to cost approximately $200,000. Equipment will be installed for large capacity. The plant will be operated under the name of the Gold Seal Asphalt Roofing Company of Illinois, recently chartered under state laws with capital of $350,000 for that purpose.

**Atlanta, Ga.**—The Chamber of Commerce, Atlanta, H. Hallman, president, is at head of a project to construct and operate a paper mill for production of newsprint on site to be selected in Central Georgia. Proposed plant will comprise several one and multi-story units, with power house, pumping station and other mechanical departments, and is reported to cost close to $5,000,000, with equipment. A joint committee of the Georgia State Legislature has been appointed to investigate the pulp wood possibilities of State and will be active in establishment of the mill.

**Hamden, Conn.**—The New Haven Paper Box Company, 214 East street, New Haven, Conn., manufacturer of paper boxes and other containers, is completing preliminary plans for proposed new plant on site recently acquired at Welton and Benton streets, Hamden, previously referred to in these columns, and will take bids on general erection contract in near future. New unit will be one-story, semi-fireproof construction. No estimate of cost has been announced. Charles H. Abramowitz, New Haven, is architect. Benjamin Ledewitz is president.

**Arai, Japan**—Dainippon Celluloid, K.K., Tokyo, Japan, has approved plans for immediate erection of a new mill for the production of cellulose products at Arai, Niijata Province. It will comprise several one and multi-story units, equipped for large capacity, and is estimated to cost close to $300,000, with equipment. Work will be carried out as a 1938 project, with completion scheduled around the middle of the year.

### New Companies

**Springfield, Mass.**—The Jarisch Paper Company, Inc., 118 Fountain street, has been incorporated with capital of 100 shares of common stock, no par value,

to deal in paper products of various kinds. Alfred Jarisch is president.

**Buffalo, N. Y.**—The New Wall Paper Corporation has been chartered with capital of 200 shares of stock, no par value, to deal in wall paper stocks. New company is represented by Aaron A. Deutch, 500 Walbridge Building, Buffalo, attorney.

**New York, N. Y.**—The Academy Paper Box Company, Inc., recently organized with capital of 100 shares of stock, to manufacture paper boxes and containers, is said to be arranging for early operation of a local plant. New company is represented by Albert Stuzin, 11 Park place, New York, attorney.

**Buffalo, N. Y.**—The Great Lakes Paper Stock Company, Inc., has been organized with capital of 200 shares of stock, to deal in paper goods of various kinds. New company is represented by Bradford & Weber, M. & T. Building, Buffalo, attorneys.

**New York, N. Y.**—The Center Container Corporation has been incorporated with capital of 200 shares of stock, no par value, to deal in paper boxes and containers, and allied products. New company is represented by Samuel J. Witt, 291 Broadway, New York, attorney.

**Wilmington, Del.**—The Royal Tissue, Inc., has been incorporated under Delaware laws with capital of $250,000, to manufacture and deal in tissue, crepe and kindred paper stocks. New company is represented by Harold B. Howard, Delaware Trust Building, Wilmington, attorney.

**New Haven, Conn.**—The Alsa Pulp and Board Company, 153 Minor street, recently chartered with a paid-in capital of $50,000, including cash and real estate, to manufacture paper board and allied paper products, has filed notice of change of company name to the Alsa Paper Company. A. L. Adelman is president, and Samuel I. Hershman, Hamden, Conn., vice-president and treasurer.

**Los Angeles, Cal.**—The Carpenter Paper Company, organized under Delaware laws, has filed notice to operate in California with capital of $1,150,000, manufacturing and dealing in paper products of various kinds.

**Springfield, Mass.**—The Puritan Products Company, 94 State street, has been incorporated with capital of $10,000, to manufacture and deal in fiber products. Stephen S. Taft is president.

## Morris Straightflo Pumps

A bulletin on a unique type of centrifugal pump for handling large capacities at low heads has just been published by Morris Machine Works. This unit, known as the Morris Straightflo Pump, is a marked departure from standard designs of centrifugal pumps with volute shell and impeller. The specially formed casing and screw type propeller of this design enable the pump to handle refuse and sewage as well as clear water, with extremely high efficiencies when direct driven by standard high-speed motor, and the assembly is remarkably compact. The new bulletin describes these pumps in detail with exterior views, sectional drawings and dimensions of both horizontal and vertical types and with complete rating table showing the performance of the pumps from 10-in. to 24-in. sizes, for capacities above 1500 g.p.m. and for heads up to 40 feet. Copies of the bulletin may be obtained by addressing Morris Machine Works, Baldwinsville, New York, and asking for Bulletin 167.

## N.P.T.A. Assigns Exhibit Space

The drawing for the choice of space in the exhibit to be held at the Waldorf-Astoria during "Paper Week" was held Saturday, January 15 at the office of the National Paper Trade Association, 220 East 42nd Street, New York. The assignments which were required for fifty exhibitors specifying eight-two exhibit rooms, singly and in suite, were made as follows:—

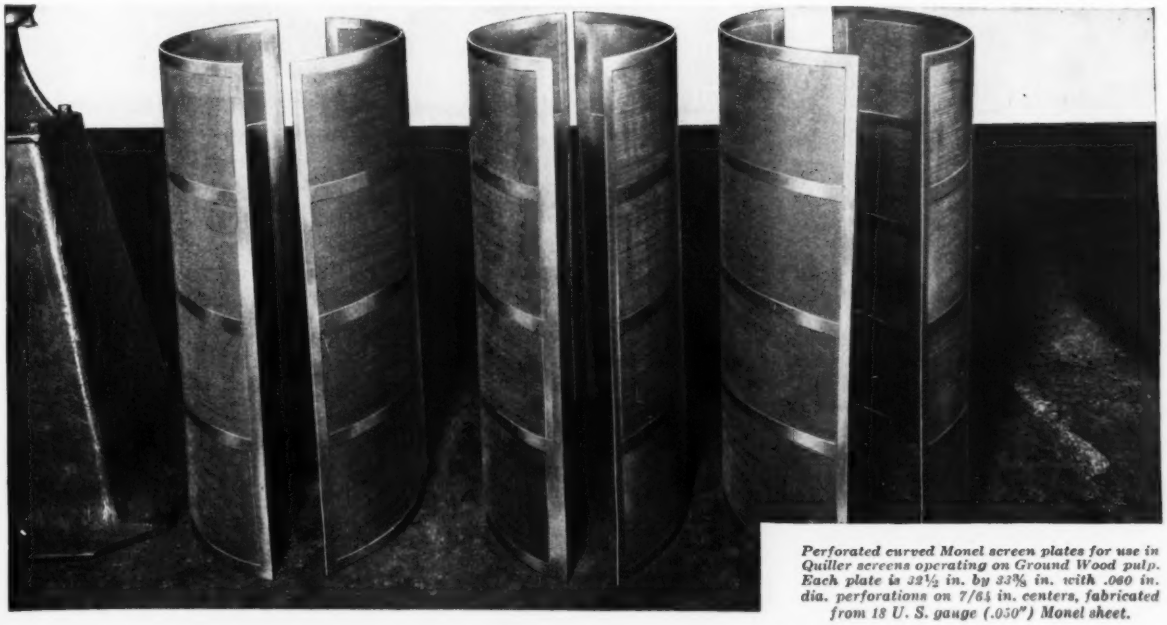
Royal Paper Corporation, 977; Gummed Industries Association, 988 and 990; Racquette River Paper Company, 914 and 916; Sherman Paper Products Company, 966, 968 and 970; Central Paper Company—Menasha, 942 and 944; A. P. W. Paper Company, 993, 994 and 995; Wheeler Paper Corporation, 973; C. E. Twombly Company, 911; Dennison Manufacturing Company, 915, 917, 919 and 921; Mid-States Gummed Paper Company, 992; North American Pulp and Paper Company, 908; Orchard Paper Company, 901 and 903; Allied Paper Bag Corporation, 936 and 938; Crossett Paper Company, 984 and 986; Wolf Brothers, 931; American Paper Goods Company, 965; A. W. Archer Company, 935; Hoberg Paper Mills, 967 and 969; John M. Hart Company, 972 and 974; Park Tissue Mills, 985; Lily-Tulip Cup Corporation, 979, 981 and 983; Dixie-Vortex Company, 953 and 955; American Lace Paper Company, 957 and 959; Oneida Paper Products Inc., 987 and 989; Mono Service Company, 934; Midland Products Company, 975; Loroco Industries, 907; Universal Paper Products Company, 963; Ludlow Manufacturing and Sales Company, 971; Alfred Bleyer & Company, 946; Boothby Fibre Can Company, 923; Stone Straw Company, 905; Pejepscot Paper Company, 909; Eagle Cup and Straw Company, 933; Brown Company, 980 and 982; Sutherland Paper Company, 927 and 929; Gilson Brothers, 991; Herz Manufacturing Company, 902 and 904; Nation Wide Papers Inc., 9-G and 9-H; Fox Paper Company, 945 and 947; A. C. Hummel Company, 951; Bay West Paper Company, 9-R, 9-S and 9-T; White-Washburne Company, Inc., 976 and 978; Fraser Industries Inc., 9-W; Union Bag and Paper Corporation, 900; Reed Tissues Corp., 939; General Cellulose Company, Inc., 961; Brown-Bridge Mills Inc., 9-P, 9-L and 9-M; Service Industries Inc., 941 and 943; Sealright Company Inc., 910 and 912.

The few remaining rooms on the Exhibit floor will be assigned in order, as applications are received.

So that all manufacturers and converters may fully understand the arrangements under which the exhibit was made possible, the management of the Waldorf are advising those who have reserved rooms elsewhere that no displays or exhibits will be held in the hotel except on the special Exhibit floor. Manufacturers who have planned on using their rooms for displaying samples or merchandise are being advised to make their reservations through the N.P.T.A. Reservations for personal accommodation only are of course being handled by the Waldorf in the regular way.

It is apparent that the 9th floor reserved for Exhibits will be the main tent this year and there won't be any side shows. Every effort will be made to acquaint the merchants with the names and location of the various exhibitors so that they can be completely and conveniently covered in the shortest possible time. There can be no doubt that this will be one of the best exhibits of the kind that has ever been held.

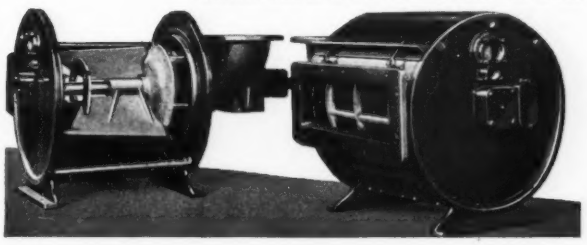
# MONEL SCREENS GUARD YOUR PULP



*Perforated curved Monel screen plates for use in Quiller screens operating on Ground Wood pulp. Each plate is 32½ in. by 33⅝ in. with .060 in. dia. perforations on 7/64 in. centers, fabricated from 18 U. S. gauge (.050") Monel sheet.*

# ...AND PRESERVE YOUR PROFIT

*(Below) Rotary pulp screen for Ground Wood mills, equipped with Monel curved and perforated plates.*



***They maintain diameter of perforations better... have longer life and provide freedom from rust and corrosion***

...so say pulp mill superintendents. And they ought to know. Yet isn't that what you'd expect? As you know, Monel* screen plates cannot rust and are stronger, tougher and far more resistant to corrosion than the common screen materials.

***Monel perforated plates used in centrifugal pulp screens handling Kraft, Sulfite and Ground Wood pulps, give three to four times longer service than identical screen plates of other metals.*** For Monel, more resistant to wear and pressure, holds the size and shape of perforations longer. Perforations enlarge slowly... and burst screen plates are an exception.

That is why Monel plates will guard YOUR pulp, preserve YOUR profit... by maintaining screening efficiency longer, and cutting replacement costs.

Monel screen plates are made in a wide variety of perforations. They are available in lighter gauges and finer perforations than screen plates of other materials of comparable strength and corrosion resistance. Ask your regular source of supply about Monel screen plates, or write us for names of makers. Address:

THE INTERNATIONAL NICKEL COMPANY, INC.
67 Wall Street New York, N. Y.

MONEL

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# PAPER TRADE JOURNAL

ESTABLISHED 1872

Reg. U. S. Pat. Off.

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Price, Per Copy, 10 Cents — United States, Per Annum, $4.00
Canada and Foreign Countries in Postal Union, $6.00

Member Audit Bureau of Circulations

Vol. CVI New York, January 27, 1938 No. 4


## COMING EVENTS IN THE PAPER INDUSTRY

AMERICAN PAPER AND PULP ASSOCIATION, Sixty-first Annual Convention and meeting, Waldorf-Astoria Hotel, New York. February 21-25.

TECHNICAL ASSOCIATION OF THE PULP AND PAPER INDUSTRY, Convention, Waldorf-Astoria Hotel, New York, February 21-24. Annual Luncheon, Waldorf-Astoria Hotel, Wednesday, February 23.

SALESMEN'S ASSOCIATION OF THE PAPER INDUSTRY, Annual Meeting and Luncheon, Waldorf-Astoria Hotel, New York, Tuesday, February 22.

NEW YORK ASSOCIATION OF DEALERS IN PAPER MILLS' SUPPLIES. Annual Banquet, Hotel Commodore, New York, February 23.

NATIONAL PAPER TRADE ASSOCIATION OF THE UNITED STATES, Convention, Waldorf-Astoria Hotel. New York. February 21-23.

NEW ENGLAND SECTION. Technical Association of the Pulp and Paper Industry—Third Friday of each month at the Nonotuck Hotel, Holyoke, Mass.

DELAWARE VALLEY SECTION. Technical Association of the Pulp and Paper Industry—Second Friday of each month at the Engineers Club, Philadelphia, Pa.

LAKE STATES SECTION, Technical Association of the Pulp and Paper Industry— Second Tuesday of each month at the Conway Hotel, Appleton, Wis.

KALAMAZOO VALLEY SECTION, Technical Association of the Pulp and Paper Industry—First Thursday of each month at the Park,American Hotel, Kalamazoo, Mich.

AMERICAN PULP AND PAPER MILLS SUPERINTENDENTS ASSOCIATION, Annual meeting, Royal York Hotel, Toronto, Ont., June 22-24.

CANADIAN PULP AND PAPER ASSOCIATION. Annual meeting. Windsor Hotel, Montreal, Que. January 26-28.

## 1707 VS. 1938

*"The past deceived me, the present torments me, the future terrifies me."*—Edmond Rostand in 1707.

## PAPER EXPORTS AT HIGH LEVEL

Exports of paper and paper products from the United States continued to hold up well to the end of 1937. November shipments exceeding those of the corresponding month last year by 50 percent. Present indications are that the total for the calendar year of 1937 will reach the 1930 total of $30,000,000. Exports for the 11 months ended November 30, 1937, reached a total of $28,348,941 in value, an increase of approximately 40 percent over the corresponding period in 1936. While some of this increase can be accounted for by a higher range in prices, the greater part was due to a substantial increase in the volume of shipments. Excluding wall boards and insulating boards, wall papers, and "other paper products," which are not shown by weight and which represent somewhat less than 25 percent of the total shipments, we find the volume of exports during 1937 32.4 percent higher than in the preceding year, while the value on the same classes increased by 43.7 percent.

Exports of paper base stock from the United States during 1937 made even greater progress than paper. The value for this group reached $20,424,196 for the first 11 months of the year, an increase of 82 percent over the corresponding period in 1936, and closely approaching in value the amount recorded for the paper group. Exports of bleached sulphite pulp accounted for about 67 percent of the paper stock exports, other classes of wood pulp absorbing an additional 8 percent. The remaining 25 percent represents rags, waste paper, and pulpwood. Exports of woodpulp during 1937 show a rise of 46 percent in volume and 75 percent in value over 1936, rags an increase of 58 percent in volume and 105 percent in value, and other paper stocks increases of 265 percent and 213 percent respectively.

## SOUTHERN FORESTS AT CROSSROADS

Southern prosperity and Southern forests are now standing at the crossroads, according to F. A. Silcox, Chief of the Forest Service, U. S. Department of Agriculture. With 60 percent of the land of cotton, corn, and sugar cane still in forest growth, the future of the South depends in large part upon how its forest lands are managed, he says.

The Forest Service Chief points out that more than three-fourths of the forest area in the South, and nearly three-fifths of its timber, is now second growth; that production of yellow pine for lumber, 95 percent of which comes from the South, increased from about 3 billion feet, board measure, in 1932, to more than 7 billion feet in 1936; that this increase may be intensified by the need to meet our present national housing shortage; that forest stocking in the South is below normal, and that a part of the current annual growth must be retained if depleted forests are to be built up.

This is significant, he adds, in light of the fact that the per capita consumption of paper in the United States is rising, and that recent investments by pulp and paper interests almost double previous demands for pulpwood in the South.

"Superimposing new pulp and paper plants upon the thousands of lumber and other forest industries already established there means that, without some form of intelligent forest management, certain Southern forest areas may be left in an unproductive condition for generations," says the Forest Service Chief.

If pulpwood requirements are supplied so far as possible from stands handled under light cuts, with integrated utilization of the timber removed, and coordination with growth and the needs of existing

timber-using industries, Mr. Silcox believes planned pulp and paper expansion can be a constructive, economic force in bringing general prosperity to the South.

"But we cannot afford to stick our heads in the sand, like the proverbial ostrich," he says. "On the basis of current demands for the general run of forest products, plus projected demands for new but known pulp mills, Forest Survey data already show an annual deficit of computed net growth of nearly 2,000,000 cords for the southern naval stores region as a whole."

This deficit must be taken into consideration in managing the South's forest resource, according to Silcox, because it may be dangerous to take too provincial a viewpoint with respect to worldwide conditions. Indications are, he declares, that except for Russia—which will apparently use all the pulp she herself can produce for the next few decades—margins of softwood timber for pulp are now confined to Alaska, western Canada, the Pacific Northwest and the South.

This situation is bound to have its repercussions on southern forests and forest industries, where planned production of pulpwood is now double that of a few years ago, according to Mr. Silcox.

Although groups of Southern pulp interests have endorsed woods practice rules designed to prevent actual devastation, these rules are not adequate to assure continuous crops of timber," he said.

"Ninety-five percent of the South's forest land is in private ownership, and in general forest exploitation is still practiced there.

"This situation illustrates why public regulation is necessary, although public ownership, and public cooperation with private owners should be extended. Experience both here and abroad has shown that public regulation is needed to protect industry, as well as the public, from the private owner who continues unfair competition through forest exploitation.

"Nature has been kind to the South, but the South must realize that its forest possibilities, glowing as they appear, contain elements of danger; that although forests are one of her most important bases of prosperity, their productivity may easily be destroyed. And since it is useless to shut the stable door after the horse is stolen, now is the time for the South to start building up and renewing her forest resources.

"Tomorrow may be too late."

## Consulting Chemists Issue Directory

The 1938 Directory of the Association of Consulting Chemists and Chemical Engineers, Inc., just issued, contains valuable details about the work these leading consultants are especially prepared to undertake. Copies may be obtained gratis on request to the Association located at 50 East 41st street, New York, N. Y.

## Production Ratio Report

These statistics are based upon paper production reports to the American Paper and Pulp Association:

COMPARATIVE MONTHLY SUMMARIES

| Months | 1937 | 1936 | 1935 | 1934 |
|---|---|---|---|---|
| January | 90.3% (c) | 76.1% | 65.8% | ..... |
| February | 90.1% (c) | 77.9% | 70.0% | ..... |
| March | 90.3% (c) | 76.0% | 70.5% | ..... |
| April | 92.1% (c) | 82.3% | 70.0% | ..... |
| May | 90.6% (c) | 81.6% | 69.4% | ..... |
| June | 87.3% (c) | 80.7% | 72.3% | ..... |
| July | 81.8% (c) | 77.3% | 64.9% | ..... |
| August | 82.9% (c) | 81.5% | 70.9% | ..... |
| September | 78.6% (c) | 80.5% | 71.9% | 58.2% |
| October | 73.5% (c) | 87.6% | 75.6% | 64.7% |
| November | 61.7% (c) | 88.0% | 75.3% | 61.7% |
| December | 54.3% (c) | 85.9% | 71.2% | 59.6% |
| Year Average | 80.7% | 81.3% | 70.5% | ..... |

COMPARATIVE WEEKLY SUMMARIES

| CURRENT WEEKS | | CORRESPONDING WEEKS | |
|---|---|---|---|
| *December 11, 1937 | 55.8% | December 12, 1936 | 93.3% |
| *December 18, 1937 | 59.5% | December 19, 1936 | 94.4% |
| *December 25, 1937 | (h)48.4% | December 26, 1936 | (h)66.5% |
| *January 1, 1938 | 46.9% | January 2, 1937 | 85.1% |
| *January 8, 1938 | 58.4% | January 9, 1937 | 92.1% |
| *January 15, 1938 | 59.7% | January 16, 1937 | 90.2% |

The following statistics show the number of mills reporting by ratio groups:

| | Number of Mills Reporting, Current Weeks | | | | | |
|---|---|---|---|---|---|---|
| Ratio Limits | Dec. 11, 1937 | Dec. 18, 1937 | Dec. 25, 1937 | Jan. 1, 1938 | Jan. 8, 1938 | Jan. 15, 1938 |
| 0% to 50% | 164 | 152 | 190 | 199 | 132 | 93 |
| 51% to 100% | 154 | 167 | 129 | 116 | 171 | 129 |
| Total Mills Reporting | 318 | 319 | 319 | 315 | 303 | 222 |

* Subject to revision until all reports are received.

(c) Basic capacity data have been adjusted to correspond with ratings reported by individual companies.

PAPERBOARD OPERATING RATIOS

According to reports from the National Paperboard Association, per cents of operation, based on "Inch-Hours", were as follows:

| Mos. | 1937 | 1936 | 1935 | 1934 | Mos. | 1937 | 1936 | 1935 | 1934 |
|---|---|---|---|---|---|---|---|---|---|
| Jan. | 80% (e) | 61% | 61% | .... | July | 67% (e) | 69% | 59% | .... |
| Feb. | 86% (e) | 67% | 67% | .... | Aug. | 74% (e) | 75% | 65% | .... |
| Mar. | 87% (e) | 68% | 67% | .... | Sept. | 70% (e) | 76% | 69% | 62% |
| Apr. | 89% (e) | 70% | 61% | .... | Oct. | 66% (e) | 82% | 76% | 63% |
| May | 86% (e) | 68% | 61% | .... | Nov. | 56% (e) | 79% | 70% | 56% |
| June | 75% (e) | 68% | 65% | .... | Dec. | 46% (e) | 74% | 60% | 52% |

Week end. Dec. 11, 1937—53%
Week end. Dec. 18, 1937—51%
Week end. December 25, 1937—48% (h)
Week end. Jan. 1, 1938—24%
Week end. Jan. 8, 1938—45%
Week end. Jan. 15, 1938—52%

(e) Basic figures revised to include new members of the National Paperboard Assn.
(h) Holiday week, percentages based on six days' operation.

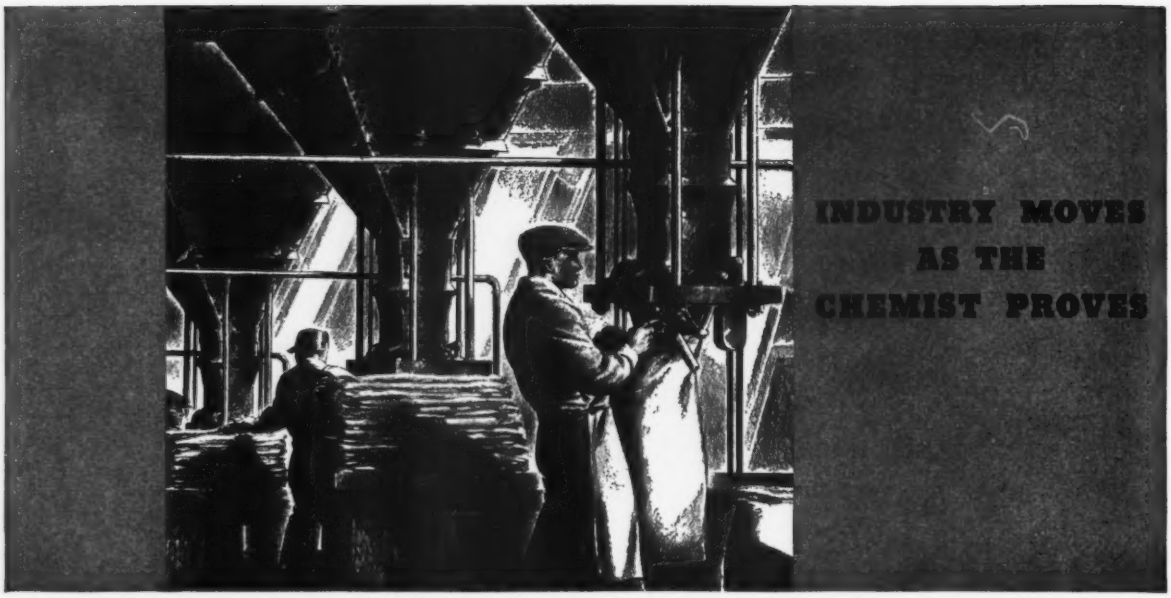
## Ira T. Fisk Resigns

Ira T. Fisk has resigned as superintendent of the North Hoosick and Walloomsac plants of the Stevens & Thompson Paper Company, effective January 22.

He has given his entire business life to the service of this company and leaves a record of over 45 years of faithful and loyal service.

He began with the company as a boy, doing such odd jobs as could be assigned to him. He was soon put to work on one of the paper machines and gradually rose step by step to full charge of the operations of these two plants. He is widely known through the paper trade for his ability and skill in the manufacture of paper and board. The business of the company is of a nature that draws heavily on these qualities and the company has accepted his resignation with great regret and all good wishes for his success in whatever line of endeavor he may undertake.

His duties will be taken up by Wm. Cathcart who has worked with Mr. Fisk for many years and is well qualified for the work.




# CYANAMID TAKES THE GUESSWORK OUT OF CASEIN MAKING

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Cyanamid can supply you with all the principal grades of casein—such as lactic, sulphuric and muriatic—ground to any desired mesh. Our imported casein is manufactured by leading producers in the Argentine, France and New Zealand—and is also available in any desired mesh.

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Section of the
Technical Association of the Pulp and Paper Industry
T.A.P.P.I.

Edited by Ronald G. Macdonald, Secretary

# Review Of The Paper Industry Literature

Abstracts Compiled By the Abstracts and Bibliography Committee of the Technical Association of the Pulp and Paper Industry, A. Papineau-Couture, John F. Ohlson and Clarence J. West, Chairman of the Committee.

**Copies of United States Patents can be obtained from the United States Patent Office, Washington, D. C., for 10 cents each. Send currency, not stamps.**

## Mechanical Process

**Pulp Grinder Stones with Ceramic Binding.** A. P. Bendryshev and A. D. Shapiro. Tsentral. Nauch.-Issledovatel. Inst. Bumazh. Prom., Materialy 1936, no. 1:117-136; C. A. 31:3263.—Experiments are described in the production of solid and segmented pulp grinder stones of the Norton and Aloxite types and according to the Koifman method. One binder consisting of alumina, portland cement and corundum and another of phenol-formaldehyde condensation product were used in the construction of segmented stones.—C.J.W.

**New Developments in the Production of Ground Pulp.** A. D. Shapiro. Tsentral. Nauch-Issledovatel. Inst. Bumazh. Prom., Materialy 1936, no. 1:136-161; C. A. 31:3263.—A discussion.—C.J.W.

**Technical Control in the Groundwood Mill.** R. D. Moynihan. Paper Industry 18: 1061-1063 (March, 1937).—Suggestions for efficient control of groundwood quality.—A.P.-C.

**Method of Preparing Wood for Grinding.** Lester W. David. U. S. pat. 2,075,023 (March 30, 1937).—The wood to be ground is cleaned of all foreign matter and is barked. The pieces are assembled in cars or other containers with the material arranged with the sclerenchymatous fibers presenting their main axes parallel to the longitudinal faces of the container. The wood is then subjected to a chemical treatment to soften it (e.g., heating under pressure and below the boiling-point with a solution of sodium carbonate or sodium sulphite), and the softened wood is compressed into compact bales to fit within the pocket of the grinder. [Cl. 92-6].—A.P.-C.

**Device for Defibering Wood.** Neil C. Ward, assignor to Anderson-Tully Co. U. S. pat. 2,075,246 (March 30, 1937).—The wood is placed in a hopper with vertical walls. Under the bottom of the wall an endless, flexible belt is made to travel at high speed (about 1000 ft. per min.). Secured to the belt are upwardly projecting, rigid, pointed teeth or prongs which engage the wood in the hopper and pull out the fibers either individually or in small bundles. Before defiberizing, dry wood should be thoroughly soaked; green wood requires no soaking. [Cl. 83-75].—A.P.-C.

**Production of Rag Halfstuff from Seed-Flax Waste.** G. E. Shnyparkov and E. V. Lipshitz, Bumazhnaya Prom. 15, No. 12:32-40 (Dec., 1936); C. A. 31:3261.—A modified procedure for sulphate pulping of seed-flax straw, ensuring a uniform disintegration of the bast and woody tissues, is discused.—C.J.W.

**Production of Halfstuff and Paper From Wood Barking Waste.** I. E. Shcheglov. Bumazhnaya Prom. 15, no. 11: 38-43 (Nov., 1936); C. A. 31:-3267.—Spruce waste (containing 25 per cent bark) cooked on a semi-commercial scale by the Skolovskii method gave a halfstuff suitable for the production of a low-grade wrapping paper.—C.J.W.

**Production of Wood Wool.** Maximilian Lederer, assignor to Alexander Singer. U. S. pat. 2,074,590 (March 23, 1937).—In the production of wood wool suitable for the production of building material, the wood is pretreated with steam and neutral lead acetate solution. [Cl. 92-6].—A.P.-C.

## Raw Material

**Lignin and Related Compounds. XXVII. Methylation and Structure of Spruce Methanol Lignin.** Jack Compton and Harold Hibbert. Can. J. Research 15B:38-45 (1937).—The composition of spruce methanol lignin prepared by the action of anhydrous solution of hydrogen chloride in methanol on spruce meal varied with the temperature and time of extraction. The reaction mixture contained two products, having methoxyl contents of 21.6% and 24%, respectively. Higher temperatures and longer time of heating favored formation of the latter. Long-continued extraction of the crude methanol lignin with ether removed the second product (methoxyl content 24%). This showed that this was a true "ether-soluble" fraction, but it was not found possible to isolate the pure methanol lignin (methoxyl 21.6%) by this extraction or, as now shown, by use of 8 to 10% sodium hydroxide. Methylation of methanol lignin with dimethyl sulphate and alkali gives rise

to the formation of new hydroxyl groups, the extent of the changes increasing markedly with rise in temperature of methylation and with increase in concentration of alkali used. A methanol lignin (methoxyl 22.3%) on repeated methylation yields a methylated lignin containing 37.2% of methoxyl. Degradation during methylation is restricted by the use of acetone as solvent and only a slight excess of alkali (5 to 10%) at 20°C. The results indicate the necessity of caution in the interpretation of data based on methylation experiments involving the use of alkali, and point to the presence of heterocyclic oxygen rings, nonfuran in type, as part of the lignin structure. When reduced for 48 hrs. with 65% of aqueous methanol containing 9% of sulphuric acid, ether-insoluble methanol lignin (methoxyl 22.3%) yielded a product with methoxyl content of 21.3% which decreased to 20.9% when the product was treated for a further 52 hrs.—A.P.-C.

### Black Liquor

**Fatty Acids From Pine Wood.** James A. Wallach. Soap 13, No. 3: 31-33, 73 (1937); C. A. 31:3313.—Pine wood fatty acids are obtained by cooking pine chips with caustic in the paper industry and then freeing them from their soap. They are known as tall oil, whose composition for the crude and distilled is, resp.: acid no. 140, 164; iodine no., —, 117; percentage of rosin acids, 58, 35; percentage fat acids, 18, 50; non-acids, such as sterol, etc., 24, 15. In general, the uses for the distilled tall oil arise from the fact that it has many of the characteristics of unsaturated acids. It is most often used in place of red oil, and as a substitute for semidrying oils. Upward of 20 percent is reported as being used as a substitute for other fats in soap. The petroleum and paper industries and the mineral flotation field also find use for this product. A good many anticipated uses are reported still in the laboratory stage.—C.J.W.

**Process of Treating Vegetable Fibrous Material for the Production of Cellulose Fibers.** Franklin R. Chesley, Jr. U. S. pat. 2,073,682 (March 16, 1937).—Fibrous material is subjected to the action of an aqueous weak alkaline solution in presence of aluminum, capable of dissolving the gums and resins, but of insufficient causticity to affect the cellulose, suitably a mixture of tribasic sodium phosphate, soda ash and aluminum sulphate. A bleaching chemical also may be included in the solution. In the case of wood, a double treatment with intervening washing can give substantially pure "alpha" pulp. [Cl. 92-17].—A.P.-C.

**Tall-oil Fat Acids.** Fr. Kolke. Farben-Ztg. 41:-1186 (1936); C. A. 31:3308.—The usefulness as a paint component of esterified tall-oil fat acids is limited by (1) their odor, dark color and slow drying properties and (2) the unsatisfactory elasticity and weather resistance of paint films containing excessive amounts of tall-oil esters.—C.J.W.

**Discussion of Different Recovery Furnaces.** Gustaf Edling. Svensk Pappers-Tidn. 40, No. 6:132-141 (March 31, 1937); B. I. P. C. 7:294.—The heat-economical factors of disc evaporators, the S-S (Sandberg-Sundblad) system, and the Tomlinson recovery method are discussed, with special emphasis on the construction and operation of the last mentioned system. Heat savings of 0.5 million calories per ton of pulp are possible with the Tomlinson system as compared to the most efficient construction of the S-S system. The cost of installing a Tomlinson unit with economizer and air pre-heater is given for Swedish conditions.—C.J.W.

**Occurrence of Resin Acids in the Black Liquor and Wash Water.** Svensk Pappers-Tidn. 40, No. 5:112-114 (March 15, 1937); B. I. P. C. 7:295.—Of the liquid rosin contained in the black liquor discharged from the digester only 37% is recovered as rosin soap, while the residual 63% remains dissolved in the liquor and is lost with either liquor or wash water. A thorough and prolonged washing of the fibers is essential to remove as much as possible of the liquid rosin which otherwise will cause dirty spots in the paper.

When space is available a subsequent washing after the diffusers is very effective. The resin acids in the wash water, however, combine with lime, and alkali to salts which are very harmful to fish life even at low concentrations; hence they should never be discharged into rivers. Reference is made to successful laboratory experiments for rendering the resin products in the wash water harmless even in great dilution; the actual procedure, claimed to be cheap and simple, is not disclosed.—C.J.W.

### Sulphite Process

**Optimum Conditions of Pulping for the Production of Viscose Pulp.** I. L. Kagan. Tsentral. Nauch.-Issledovatel. Inst. Bumazh. Prom., Materialy, 1936, No. 1: 3-31; C. A. 31:3263.—The results of laboratory and semicommercial study of the influence of various factors in the cooking process on the chemical and physical properties of viscose pulp are tabulated, graphed and discussed. A viscose pulp best suited for the Syaskii mill conditions with 23-27 degrees hardness (Sieber) and viscosity of 250-300 millipoises for unbleached stock was obtained with 3.84-3.91 per cent sulphur dioxide and 0.78-0.81 per cent lime at 145-146 deg. C. for 3.5-4 hours, with preheating periods of 2 hours each at 110-128 deg. and 128-145 deg. Bleaching by the method of Nikitin gave the best results.—C.J.W.

**The Formation of Carbon Dioxide in Sulphite Cellulose Cooking.** O. Routala and Terttu Vauhkonen. Suomen Kemistilehti 10B:2 (1937); C. A. 31:2813.—Calcium gluconate, subjected to sulphite cooking, forms carbon dioxide and a pentose, which further decomposes to furfural.—C.J.W.

**The Effect of Pretreating Wood in Aqueous Salt Solutions on Subsequent Delignification in Sulphite Liquor.** J. M. Calhoun and O. Maass. Can. J. Research 15B: 80-83 (1937).—The pretreatment of spruce wood in various neutral salt solutions was found to retard subsequent delignification in sulphite liquor to an extent depending upon the position of the ions of the salt in the lyotropic series. Increase in the salt concentration increased the effect of pretreatment.—A.P.-C.

**Occurrence of Acetone and Syringic Aldehyde As Degradation Products of Lignin Substances.** Alan Bell, W. Lincoln Hawkins, George F. Wright and Harold Hibbert. J. Am. Chem. Soc. 59: 598 (March, 1937).—Acetone was obtained by a stepwise oxidation as well as by ozonization of formic acid spruce lignin. Syringic aldehyde was isolated by the alkaline scission of sulphite waste liquor

from yellow birch wood; it has a melting-point of 111.5 to 112 deg. C. (corrected).—A.P.-C.

**Occurrence of Acetovanillone in Sulphite Waste Liquor From Coniferous Woods.** Irene K. Buckland, George H. Tomlinson, Jr., and Harold Hibbert. J. Am. Chem. Soc. 59: 597 (March, 1937).—Among the products of the alkaline degradation of sulphite waste liquors from spruce and balsam is acetovanillone (3-methoxy-6-hydroxyacetophenone), melting at 114.5 deg. C. (corrected) and identical in every way with the synthetic product made from guaiacol acetate.—A.P.-C.

**Improvement to the Manufacture of Vanillin From Sulphite Waste Liquor.** Howard Smith Chemicals, Ltd. Belg. pat. 417,724 (Nov. 30, 1936).—The sulphite waste liquor is treated with hot caustic alkali; the resultant liquid is treated with carbon dioxide to liberate the vanillin thus formed, and the vanillin is extracted with a solvent that is immiscible with water.—A.P.-C.

### Sulphite Waste Liquor

**Sulphite Cellulose Waste Liquor, a Raw Material for Making Light Colored Soaps.** Karl Braun. Seifensieder-Ztg. 64: 207-208 (1937); C. A. 31:3722.—The lignin sulphonic acids present in sulphite cellulose waste liquor have wetting, dispersing and cleaning powers and are suitable as ingredients in soaps for use in hard water, sea water, etc. Possibilities of reducing the consumption of fat acids for soaps are emphasized. 16 references.—C.J.W.

**Sulphite Determination in Sulphite Extract.** N. S. Fokina. Kozhevenno-Obuvnaya Prom. 15, No. 8: 41-43 (1936); C. A. 31-3328.—*p*-Nitroaniline is diazotized in the usual manner. Fifty cc. of the sulphite extract is treated at room temperature with an excess of the diazotization mixture, 15-20 cc. of a 20-30 per cent sodium acetate solution is added, the precipitate is filtered after at least one hour, washed and dried at 105 deg. C. Determination of sulphur dioxide in the precipitate gives the sulphite content in the tanning substance with a satisfactory accuracy.—C.J.W.

**Fixation of the Tanning Materials of Ammoniacal Sulphite Cellulose Extracts and Oak Extracts Applied in Combination.** G. A. Arbuzov. Tsentral. Nauch.-Issledovatel. Inst. Kozhevennoi Prom., Sbornik Rabot, No. 9: 100-119 (1936); C. A. 31:3327.—In tanning with sulphite cellulose, followed by oak extracts, the oak tannin combines with the collagen already combined with the sulphite cellulose tannins, and gradually displace the sulphite tannins with increasing *p*H, up to *p*H 4. In tanning with oak extract followed by sulphite cellulose extract, the oak tannins are partially displaced from a combination with collagen, this displacement being lower, the higher the *p*H of tanning. In the final tanning of hide powders, tanned with mixed solutions, with an oak solution, and additional fixation of oak tannins takes place, in which sulphite cellulose tannins are not displaced.—C.J.W.

**Added Notes on the Running of Beaters.** Arthur B. Green. Paper Industry 19: 52-58 (April, 1937).—Attention is drawn to the time factor in the production of beater effects on paper making stock. A number of beater charts are reproduced and discussed to show their significance and the improvements and uniformity resulting from proper beater control. There are three instruments available for effecting this control, according to operating conditions: the beater drag, the torsion dynamometer beater control, and the pendulum (or gravity) dynamometer beater control. These three instruments are briefly described.—A.P.-C.

**Utilization of Sulphite Pulping Wastes.** D. M. Shilinskii. Bumazhnaya Prom. 15, No. 12: 51-58 (Dec., 1936); C. A. 31:3266.—The procedures used at the Syaskii paper mills for the purification of waste waters in the cooking and bleaching processes and recovery of the suspended fibers are discussed. A modification of the methods is proposed.—C.J.W.

**Organic Portion of Sulphite Waste Liquor.** P. P. Shorygin, I. P. Losev and V. N. Belov. Lesokhim. Prom. 5, No. 6:26 (1936); C. A. 31:3263.—Steam distillation of a sulphite waste liquor yielded only volatile organic acids and sulphur dioxide. Aldehydes, thymol, and organic bases were not found in the distillate. Extraction of the acidified sulphite waste liquor with ether yields a small amount of a "lactone of sulphite lye" and a mixture of two undetermined crystalline substances.—C.J.W.

### Miscellaneous Digesting Methods

**Extracting Method and Apparatus.** Joaquin Julio de la Roza, Sr., assignor to de la Roza Corp. U. S. pat. 2,063,367 (Dec. 8, 1936).—The invention provides means for discharging pulp and paper liquor from the de la Roza continuous digester and washing the pulp. The semi-liquid digested mass is delivered from the digester to a pressing device which preferably consists of a perforated or slotted and jacketed cylinder, the walls of which are of progressively decreasing diameter so that the action of the piston causes the formation of a dense plug from which the chemical and liquor flows and is carried away through the perforations of the cylinder. The end of the cylinder is closed by an automatic valve which opens when the pressure has built up to a desired predetermined value and discharges the plug into a shredding and repulping machine where it is washed. One or more similar machines may be used in series.—A.P.-C.

**Preparation of Cellulosic Material.** George W. Miles, assignor to Celanese Corp. of America. U. S. pat. 2,074,339 (March 23, 1937).—Cellulose suitable for esterification is obtained by treating natural cellulosic material (cut or ground to short lengths or chips) at elevated temperature under atmospheric pressure with a 0.5 to 10% nitric acid solution, washing and treating at atmospheric pressure, at or near boiling-point with a 1 to 3% caustic alkali solution. The alkaline treatment may be replaced or followed by a hypochlorite treatment. [Cl. 92-9].—A.P.-C.

## Zellerbach Paper Co. To Hold Election

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., January 26, 1938. — The National Labor Relations Board has announced that a run off election will be held within 15 days of the election among employees of the Zellerbach Paper Company, Los Angeles, Cal., to determine collective bargaining representatives.

# Instrumentation Studies. XXV

## The Williams Smoothness Tester

By The Staff of The Institute of Paper Chemistry

In any discussion of the property of smoothness, it is necessary to point out that the present common conception of smoothness does not apply to a definite fundamental property of paper. The many factors influencing the quality called smoothness have been discussed in Instrumentation Studies. VIII: "An Analysis of Smoothness."[1] Not only is smoothness affected by many factors but the concept of smoothness varies with different observers. To quote from Instrumentation Studies. IX: "The Bekk and Gurley Smoothness Tester".[2] "According to some definitions it is the actual topography of the sheet under no pressure. According to others it is the topography when under a given pressure. According to others, it is the variation in caliper of adjacent spots. In the case of visual examination, smoothness is the degree of apparent roughness." These several criteria are inter-related to some extent and all of the commonly used methods of measurement are influenced by more than one of them. Thus, in a discussion of this kind, smoothness can be defined only in the terms of the instrument used for measurement. The designers of these instruments have attempted to measure indirectly the general group of properties involved in smoothness and to obtain a result that correlates with the printing properties of the paper under consideration. This correlation has not been fully developed, at least in published information. On the validity of such a correlation rests the whole value of smoothness tests by those methods.

Three instruments, the Bekk, the Gurley, and the Williams, have been developed for the measurement of the general quality of smoothness, all using a similar principle. This principle, briefly, is as follows: The volume of air voids between a plane surface and a paper surface pressed against it is proportional to the roughness of the paper. The rate of air flow between the two surfaces under a given pressure differential is proportional to the volume of these voids. The assumption is made that, by the pressure applied to the sample held against the plane surface, the condition of the paper surface can be regulated to correspond to its condition under printing pressure. In the three instruments listed above, variations in the several factors influencing the test are used with the Williams tester. The measurement is carried out by determining the rate of air escape between two paper surfaces pressed against each other, instead of pressing the surface to be measured against a plane surface. The other sides of the sheets used are in contact with a soft rubber backing which, theoretically, seals off these surfaces so that the air escaping must pass between the two paper surfaces in contact or transversely through the structure of the sheet. In this instrument provision is made for measurement of transverse porosity, that is, air travel through the sheets, by repeating the test, after the smoothness values have been obtained, with a sheet of soft rubber between the two surfaces of the paper that were in contact with each other during the smoothness test. The insertion of this rubber sheet between the two surfaces of the paper theoretically seals all four surfaces and only allows escape of air through the structure of the sheets.

A fundamental difference between the Williams and the other two testers mentioned above is that in the former the measurement of air escape is between two paper surfaces instead of between a paper surface and a smooth plane surface. This difference in procedure may be open to question, since the same conditions of contact do not exist in printing. However, as pointed out before, the only criterion of the correctness or incorrectness of any of these procedures is the degree of correlation with printing results.

### Description of Instrument

The Williams instrument, shown schematically in Fig. 1, provides for measuring a constant volume of air, which is compressed and applied to the center of a clamp holding a folded-over sample of paper under definite pressure, in such a way that the air can pass between the two surfaces of the paper. Provision is made for automatically measuring the time required for a definite volume to pass. The air measuring device consists of a cylindrical mercury chamber (3) carrying in its center a ⅛ inch tube (2) which is open at the top and leads through the bottom of the mercury chamber to the sample holder (5). A cylinder with a closed top (1) fits inside the mercury chamber and around the air tube. Provision is made for sliding this cylinder up or down through a distance of 4.5 inches. Fitted to the mercury chamber is a side arm tube (4), in which the mercury maintains the same level as in the mercury chamber. In operation, tube (1) is in the raised position at the time that the paper is placed in the clamp holder. At this point its lower end just clears the level of the mercury (7). To start the test, tube (1) is pushed down to its lower limit. As its lower end enters the mercury, a definite volume of air is trapped and compressed, the mercury rising to (8) outside the tube and (9) inside the tube. The compressed air is forced to the sample holder and out between the two sheets of paper. The instrument, as supplied, is filled with a definite quantity of mercury by which the volume and pressure of the entrapped air are controlled. The time for escape of a definite vol-

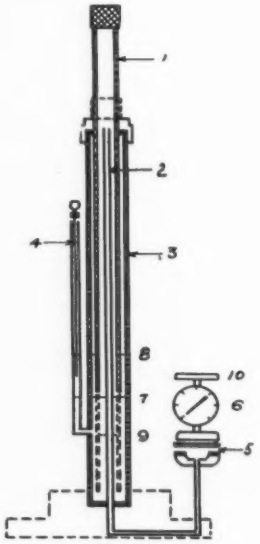


Fig. 1.
Schematic Drawing of Instrument

[1] Paper Trade J. 104, no. 11: 43-46 (March 18, 1937).
[2] Paper Trade J. 104, no. 12: 62-66 (March 25, 1937).

ume of air is measured with an electric clock connected in series with an electrical contact wire (4) and the body of the instrument. The contact wire is insulated from the rest of the instrument and when the mercury level reaches the lower end of this wire the clock is started. When the level falls below the end of the contact wire the circuit is broken and the clock stops. This contact wire is adjustable, by means of which the volume of air passed through a calibration plate, supplied with the instrument, is adjusted to a standard volume. The sample clamp (5), which is supported in the front of the instrument and the bottom of which is connected to the pressure cylinder, consists of two round clamps, the lower one being an annulus 0.5 inch wide with an outside diameter of two inches, while the upper one is a solid circular plate two inches in diameter. The clamping surfaces of these two clamps are covered with a smooth layer of soft, live rubber. The top clamp is lowered on the paper sample by means of a hand screw (10), fitted with a pressure gauge (6) to measure the clamping pressure in pounds per square inch clamping surface.

The test is carried out on a sample 2 x 4 inches. After cutting, this sample is folded over to give a two inch square. A ⅛ inch round hole is punched in the lower folded square. With the movable cylinder in the up position, the sample is then placed between the clamps and the upper clamp is lowered until a pressure of 30 pounds per square inch is indicated. The sliding cylinder is then firmly pushed down as far as it will go. As just described, this automatically starts the time clock, which runs until the contact is broken, thus indicating the time required for the passage of a definite volume of air between the two paper surfaces. It has been recognized for some time that, with this type of measurement, appreciable volumes of air may escape through the structure of the paper as well as between the two surfaces. This transverse passage of air through the sheet structure is commonly known as transverse or plane porosity. The manufacturer of this instrument has provided means for measuring this property. The measurement can be carried out on the same sample that is used for smoothness, although it would appear desirable to use a new sample of the same dimensions. For making the measurement, a thin rubber disk two inches square with a half-inch hole in the center is placed between the folded paper sample and clamped in the instrument as before. Theoretically, this provides for sealing the four surfaces of the two sheets of paper so that all escape of air must take place through the sheet structure. The manufacturer recommends that the smoothness readings be corrected for transverse porosity by the formula:

$$\frac{\text{Smoothness (secs.)} \times \text{Transverse porosity}}{\text{Transverse porosity} - \text{Smoothness (secs.)}} = \text{Corrected smoothness in secs.}$$

A calibration unit is supplied with the instrument. This consists of two circular plates two inches in diameter cut from plate glass. The lower piece has a half-inch hole drilled in its center. Running from this hole to the outside edge of the plate on a diameter is a small etched line. This line is on the surface next to the solid glass plate and provides for a slow escape of air between the two plates. The plates are held together by a strip of adhesive tape around the edges. The circular hole is filled with a porous material to act as a dust filter to keep the etching clean. These plates are clamped in the sample holder with the one containing the center hole downward and the measurement is made in the same way as for the paper sample. The resistance to the passage of air between the two plates is supposedly constant. The standard value of the plates is determined by the manufacturer, presumably by checking against a standard plate, and it is recommended that the instrument be frequently calibrated against these plates and adjusted to give the standard value.

The various units of this instrument have been carefully considered with respect to their suitability for the function they perform and the precision with which they operate.

### Air Measuring Cylinder

The measuring cylinder is simple in construction and from a mechanical point does not present serious possibilities of inaccuracies. With constant use and wear it would be possible for the travel of the vertical cylinder to change very slightly. However, this is taken care of by the calibration adjustment. The mercury in the large cylinder has a definite tendency to spatter and travel up the side. The removal of mercury from the active reservoir may have a small but appreciable effect upon the amount of air measured. Another undesirable effect noted with the instrument used in this study is the tendency for the mercury to carry over into the air tube (2) and to collect at the low point in this line. When this condition exists, the mercury held in the low end of the air tube might conceivably impede the flow of air and thus change the reading. By quickly forcing down the movable cylinder without a sample in the holder, it is usually possible to force the mercury out into the recess of the sample clamp. This may not be a condition universal to all instruments of this design and at any rate is something that can probably be corrected.

It is extremely important that the instrument be operated at a standard temperature, because the volume of mercury in the reservoir and the viscosity of air vary appreciably with temperature. This, of course, causes a variation in the amount of air forced through the sample. To check this point, tests were made on the calibration standard at 70 deg. F. and at 41 deg. F. without changing the adjustment of the electrical contact. The results obtained were:

| | STANDARD TEST READING—SECONDS | | |
|---|---|---|---|
| | Average (20 tests) | Minimum | Maximum |
| 70° F. | 80.35 | 78.6 | 81.6 |
| 41° F. | 71.71 | 70.3 | 72.8 |

These data indicate the magnitude of the temperature effects and show the necessity of constant temperature at a standard value for accurate work.

Due to the possible loss of mercury, either by spattering on the metal surfaces in the chamber or through the air tube, there is the possibility of appreciable change in mercury volume over a long period of time. If a correction is not made, this would change the volume of air compressed and the pressure at which it is supplied to the sample. In one sense, the adjustment of the contact by use of the calibration plate would overcome the change. However, a different pressure-volume ratio would exist with the smaller volume of mercury than exists with the standard volume of mercury, even though the calibration time was kept constant. The effect of this change might not be the same on paper samples as it is on the test plate and, therefore, might introduce an error. With small changes in mercury volume this effect would undoubtedly be minor, but, for

careful calibration of this instrument, means should be provided for accurately checking the volume of mercury contained in it.

### Timing Mechanism

The electric clock supplied with this instrument is very accurate and of a type that has a fractional second response. It is probably more accurate than the usual type of stop watch, provided the frequency of the current with which it is connected is accurately regulated. This is a point that should be kept in mind, because some mills may use independent power sources which are not carefully regulated as to frequency. The contact wire (4) is ingeniously designed to give accurate contact and breaking of contact, as well as ready escape of air above the mercury level, so as to insure equilibrium of level in both the mercury chamber and in the side arm.

### Clamping Device

The dimensions of the clamping device between which the measured volume of air escapes are considered suitable. These dimensions are such that the clamping pressure is distributed over a half-inch annulus with an outside diameter of two inches. This gives a more uniform distribution of air flow over the area under test than is obtained when an annulus of a small inside diameter is used.

The rubber clamping device presents a real problem in the maintenance of standard test conditions. Rubber, even that of the best quality, changes in resiliency with age and it is evident that, the harder the rubber, the greater the tendency for air to escape between the paper and rubber rather than between the paper surfaces or through the paper structure. The recommended calibration method does not provide a check on this change and at present a satisfactory method for the calibration of this factor is not apparent. To check the probability of such an effect, tests were carried out in which the rubber clamping surfaces were softened to some extent, since no aged rubber surfaces were available which might show the effect of hardening. However, if increasing the resiliency of the rubber gave an effect, it is apparent that decreasing it would also. The rubber surfaces were exposed to carbon tetrachloride to increase their resilience and transverse porosity tests were made to determine the effect of such treatment. The results indicate that the condition of the rubber is a factor of appreciable magnitude and indicate the importance of the maintenance of the proper condition of the clamping surfaces.

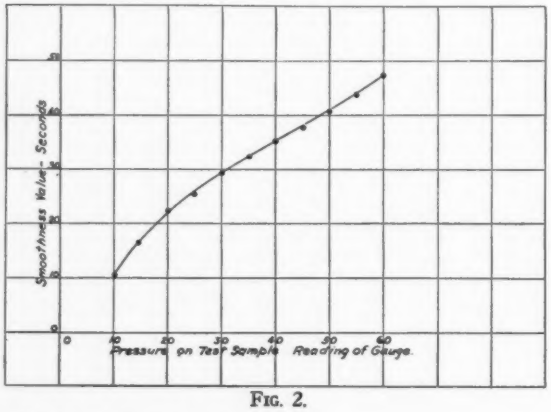


Fig. 2.

TRANSVERSE POROSITY—SECONDS

| Rubber-Normal | Rubber-Softened |
|---|---|
| 930 | 1187 |

Provision is made for reproducibility of the clamping pressure by the introduction in the upper clamp of a pressure gauge which is graduated in pounds per square inch of pressure on the area of the annulus. This gauge provides for clamping pressures from five to sixty pounds per square inch. The method recommended by the manufacturer uses a clamping pressure of thirty pounds per square inch. The question of the correct pressure in this type of test to give a good correlation of results with the printing quality of paper is a moot one and there is a considerable divergence of opinion on this point. The correct pressure can be arrived at only on the basis of thorough correlation between test results and printing trials. The type of gauge used for measurement of this pressure requires periodic calibration to insure accuracy and such calibration should be a regular part of the calibration of the instrument, since the effect of pressure on the result is great. Fig. 2 gives results obtained on a sample of English finish book paper, tested at different pressures over the range provided by the gauge. These indicate the importance of accurately maintaining the calibrated pressure at the adopted standard value.

The procedure recommended by the manufacturer provides for testing the felt and wire sides on the same sample of paper. The sample is first folded with the felt side in, thus measuring that surface. After the test, the sample is folded in the other direction and the measurement is repeated, thus measuring the wire side surface. It appears possible that the clamping pressure of the felt side test might affect the surface of the paper in such a way as to alter the result obtained on the wire side test. To check this point, ten samples of 60 pound soda sulphite, machine finish book paper were tested on the wire and felt sides, running the wire side test first. Ten other samples were tested, running the felt side first with the following results:

SMOOTHNESS READINGS

| Felt Side | | | Wire Side | | |
|---|---|---|---|---|---|
| Av. | Max. | Min. | Av. | Max. | Min. |
| | | Felt Side First | | | |
| 30.1 | 31.1 | 29.2 | 24.1 | 25.5 | 22.9 |
| | | Wire Side First | | | |
| 32.7 | 33.6 | 31.6 | 25.2 | 26.8 | 24.0 |

These results show an increase in the smoothness reading for the wire side of approximately 5 per cent and in the felt side of approximately 9 per cent. With papers of a harder or smoother surface, the effect would probably be less and with softer papers or rougher surfaces, the effect would be greater. If careful work is being done, it would appear important to use separate test samples for the wire and felt sides. Because of the fact that this effect was small, it appeared possible that it would occur only in the first clamping and that the use of two samples might be avoided by subjecting the sample to test pressure and then releasing it before making either test. This was checked by running successive tests on the same sample until a constant test value was obtained. It was found that a small smoothing effect resulted with each successive test until approximately ten tests had been made. This procedure was, therefore, discarded. From the work done, it is indicated that the samples must be handled carefully before testing, that care must be taken to bring the pressure to exactly 30 pounds, and to start the test promptly upon reaching the correct clamping pressure or, if a

time interval is allowed between clamping and starting the test, to maintain a constant interval.

### Calibration Standard

The calibration standard as supplied with this instrument is a decided asset, in fact, a necessity. As pointed out before, it does not provide a calibration of the sample clamping mechanism, but it does provide a calibration of the air measuring and timing devices. It also provides a means for checking the reproducibility of the instrument. A large number of tests have been carried out on the calibration standard supplied with this instrument. In making these tests it was found that the result obtained with the calibration standard increased rather regularly by a very small amount during the first five to ten tests after the standard had been lying idle for some time. The total increase amounted to about 4 per cent of the correct value. We believe that we have discovered the cause of this change and are bringing it to the attention of the manufacturer who will undoubtedly correct the condition. After this initial effect had been removed, it was found that the instrument possessed good reproducibility. Twenty successive tests gave an average value of 79.63, with a maximum value of 80.8 and a minimum value of 78.0, and an average deviation of 0.8 per cent.

### Transverse Porosity

The quantity of air passing through the sheet structure in this type of measurement has been the subject of considerable discussion in the past, some thinking it of great importance and others of minor importance. This property is commonly spoken of as transverse or plane porosity. The Williams tester, through the method recommended by the manufacturer, provides for its measurement. Samples typical of the several grades tested were selected and the average smoothness, transverse porosity, and corrected smoothness readings were determined; the values are tabulated in Table I. In examining these results it will be seen that, with the papers having a low smoothness reading, the correction for porosity in many cases has only a moderate effect on the results; however, in all cases, except the sample of sulphite bond, it is appreciable. In the case of the uncoated book papers, with the exception of offset, the correction in many cases at least doubles the smoothness reading. In the case of the coated book papers having a smooth finish the correction for transverse porosity increases the smoothness value several fold and, for some unknown reason, the result obtained on two of the coated books tested gave a lower porosity time than smoothness time. It becomes of interest to consider these particular results further, since from this extreme it may be possible to arrive at conclusions regarding the magnitude and importance of plane porosity.

TABLE I.—WILLIAMS SMOOTHNESS AND CORRECTED SMOOTHNESS ON TYPICAL PAPERS

| No. | Sample | Williams Smoothness Readings—Seconds | | Transverse Porosity | Williams Corrected Smoothness—Seconds | |
|---|---|---|---|---|---|---|
| | | Wire | Felt | | Wire | Felt |
| 1 | 70 lb., E. F. Book.. | 76.8 | 107.0 | 148.4 | 162.0 | 407.0 |
| 2 | 45 lb., E. F. Book.. | 37.2 | 53.9 | 166.5 | 47.9 | 80.1 |
| 3 | 60 lb., M. F. Book.. | 51.0 | 52.7 | 86.0 | 123.4 | 130.3 |
| 4 | 50 lb., M. F. Book.. | 35.0 | 51.7 | 111.8 | 51.0 | 97.0 |
| 5 | 50 lb., S. C. Book... | 106.1 | 136.6 | 284.9 | 170.0 | 265.2 |
| 6 | 70 lb., Offset..... | 9.0 | 8.6 | 31.2 | 12.8 | 11.9 |
| 7 | 50 lb., Groundwood Printing, E. F.... | 26.2 | 25.6 | 63.8 | 44.6 | 42.7 |
| 8 | Enamel Coated Book. | 492.0 | 496.0 | 532.0 | 8370.0 | 8620.0 |
| 9 | Enamel Coated Book. | 210.0 | 207.0 | 223.0 | 4950.0 | 3220.0 |
| 10 | Enamel Coated Book. | 277.0 | 279.0 | 275.0 | .... | .... |
| 11 | Enamel Coated Book. | 409.0 | 395.0 | 376.0 | .... | .... |
| 12 | No. 1 Sulphite Bond. | 5.0 | 3.5 | 74.5 | 5.4 | 3.7 |
| 13 | Envelope ..... | 14.3 | 14.0 | 55.8 | 19.3 | 18.8 |
| 14 | Sulphite Tag, .015... | 13.1 | 13.2 | 18.6 | 43.9 | 45.9 |
| 15 | Butter Carton..... | 3.0 | 3.9 | 9.7 | 4.5 | 6.5 |
| 16 | Butter Carton..... | 7.4 | 8.5 | 12.0 | 19.3 | 29.1 |

In the case of sample No. 11, the average smoothness reading was approximately 25 seconds higher than the transverse porosity. Remembering that these readings are taken under the same conditions, with the exception that a rubber pad is inserted between the sheets during the transverse porosity reading, it seems apparent that these smooth sheets form a perfect seal when their two surfaces are in contact and that all of the escape of air must take place through the sheet structure and possibly between the sheet surface and the rubber, although it is difficult to see how this can be the case. In order to obtain more information on this sample, readings were taken on a single test specimen in the following manner: First, the transverse porosity was read; next the top half of the sample was placed between the two rubber clamps of the sample holder under the normal pressure and a reading was taken. A reading was then taken on the bottom half of the sample. Assuming that the rubber clamps gave a perfect seal in the smoothness readings, it must be concluded that the escape of air in this case took place entirely through the sheet structure. The sample was then folded and smoothness readings taken in the normal way. The results obtained follow:

| | |
|---|---|
| Transverse porosity ..... | 416 seconds |
| Porosity, top half..... | 936 seconds |
| Porosity, bottom half..... | 926 seconds |
| Smoothness | |
| Wire ..... | 420 seconds |
| Felt ..... | 440 seconds |

From these results the approximate calculation of transverse porosity might be made by averaging the porosities of the individual halves of the sheet and dividing by 2. If this is done, a transverse porosity of 466 seconds is obtained. This might indicate that a small portion of the transverse porosity figure is due to the effect of the rubber. Previous results with rubbers of different degrees of softness indicated that it is possible for the rubber to influence porosity readings. The important conclusion that must be drawn from these results is that transverse porosity accounts for all or practically all of the air escape when smoothness readings are made on coated samples of high smoothness. As a corollary to this, it must be concluded that, in the case of very smooth papers, smoothness readings made on this type of instrument are principally a measure of transverse porosity rather than a measure of smoothness. Also, it is doubtful if the formula used for calculating the corrected smoothness is applicable under these conditions. From these results it would seem that all instruments based on this principle are influenced to an appreciable extent by transverse porosity. The results given here cast some doubt upon the value of these instruments for use with very smooth coated papers and indicate the necessity of applying the transverse porosity correction to all tests. When factors affecting transverse porosity, such as thickness, apparent density, and furnish, are considered, it is apparent that transverse porosity can vary widely without a necessary variation in smoothness and if the uncorrected smoothness reading, which is a measure of both smoothness and porosity, were used, erroneous conclusions might be drawn.

### Reproducibility of Results

As previously discussed, tests on the calibration plate have indicated very good reproducibility from

TABLE II.—DEVIATION OF TEST RESULTS—TEN TESTS ON EACH SAMPLE

| Sample | Wire | | | Felt | | | Plane Porosity | | |
|---|---|---|---|---|---|---|---|---|---|
| | Smoothness Average (Seconds) | Percentage Deviation | | Smoothness Average (Seconds) | Percentage Deviation | | Average (Seconds) | Percentage Deviation | |
| | | Ave. | Max. | | Ave. | Max. | | Ave. | Max. |
| 70 lb. E. F. Book | 76.8 | 9.83 | +13.92<br>−21.60 | 107 | 8.0 | +15.7<br>−18.9 | 148.4 | 7.18 | + 8.6<br>−14.0 |
| 60 lb. E. F. Litho | 28.0 | 1.78 | + 2.85<br>− 3.21 | 29.9 | 1.8 | + 4.35<br>− 6.35 | 83.9 | 2.38 | + 5.37<br>− 8.24 |
| 60 lb. M. F. Book | 51.0 | 13.1 | +20.4<br>−26.7 | 52.7 | 13.6 | +20.7<br>−25.0 | 86.0 | 11.9 | +17.4<br>−21.6 |
| 50 lb. S. C. Book | 106.1 | 4.4 | + 8.0<br>−10.7 | 136.6 | 3.2 | + 5.6<br>− 7.0 | 284.9 | 4.2 | + 6.0<br>−11.8 |
| 70 lb. Offset Book | 9.0 | 10.0 | +24.4<br>−14.4 | 8.6 | 10.5 | +21.0<br>−14.0 | 31.2 | 5.8 | + 7.1<br>−11.5 |
| No. 1 Sulphite Bond | 5.0 | 6.0 | +12.0<br>−14.0 | 3.5 | 5.7 | + 8.6<br>−14.3 | 74.5 | 1.5 | + 3.1<br>− 3.4 |
| Enamel Coated Book | 366.5 | 5.4 | + 9.0<br>− 7.7 | 383.9 | 7.0 | +15.0<br>− 8.1 | 476.4 | 4.9 | + 7.7<br>−10.2 |

test to test as far as the instrument itself is concerned. It is also important to determine the degree of uniformity to be expected in the results with various types of paper, using the Williams tester. In Table II typical results are given for the average deviation and maximum plus and minus deviations in smoothness and transverse porosity readings on seven different papers. The deviations, both average and maximum, are similar for both sides of each of the papers tested. In general, these samples show less deviation in transverse porosity results than in smoothness readings. These results indicate the degree of non-uniformity that may be expected to exist in the properties measured by this instrument.

### Comparison of Results From Williams and Bekk Smoothness Testers

Comparative tests have been made on the two instruments (Williams and Bekk), using approximately 75 samples of paper, representing the following grades: Coated book, coated one side litho, uncoated litho, English finish book, machine finish book, supercalendered book, offset, groundwood book, envelope, sulphite bond, tag stock, butter carton, and ice cream pail stock. Because of the fact that the usual readings taken with the Bekk instrument do not take into account transverse porosity and because of the fact that the corrections for transverse porosity produced such large changes in some of the results, a comparison was made on the basis of the uncorrected Williams smoothness reading. The results are plotted in Fig. 3 and show an approximate correlation between the two readings over a wide range of papers, but the correlation factor would not be constant over the whole range for the different types of papers tested. However, considering the fundamental differences in the conditions of test in the two instruments (and it is to be remembered that these results can be defined only in terms of these conditions), the correlation obtained is perhaps better than might be expected.

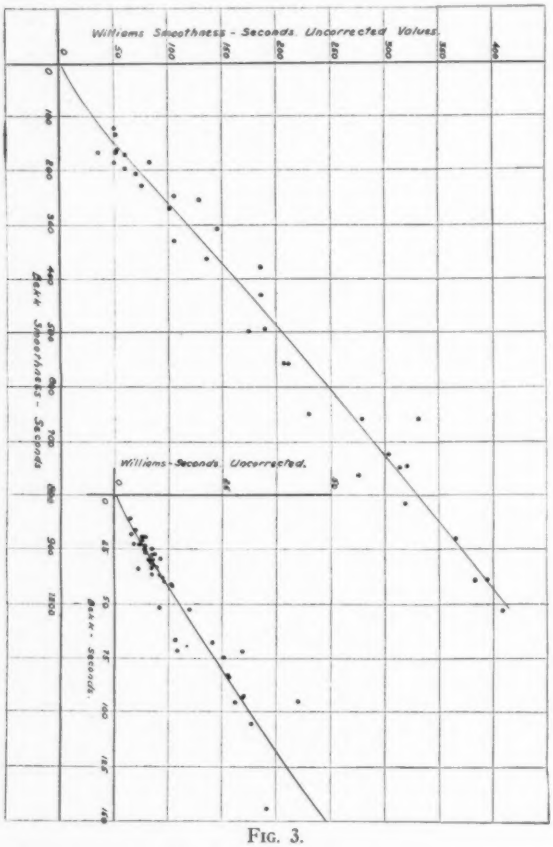
Williams Smoothness - Seconds Uncorrected Values
Bekk Smoothness - Seconds
Williams - Seconds Uncorrected.
Bekk - Seconds

FIG. 3.

Some of the test results have been omitted from Fig. 3, because there was such a large number in the group between 0 and 12.5 Williams reading. However, no results which were far removed from the average curve were omitted. In the range of readings above 300 seconds, the maximum discrepancy from the average curve was ± 20 per cent, but the number of points falling this distance from the curve was not great. In the lower range, the maximum discrepancy was 40 per cent though the majority of the points fell very close to the curve. From this it may be concluded that the Williams tester measures a similar quality to that measured by the Bekk instrument but differences do exist and the two testers do not measure exactly the same quality. It should be said at this point that whatever lack of correlation is shown in these results is not a criticism of either instrument. As pointed out before none of the instruments based on this type of test can measure a single fundamental property. Rather, the results are affected by several conditions; therefore, the value of any instrument lies in its ability to evaluate a paper for a specific use requirement. In looking at the correlation results, one wonders which of the two instruments would show the closer correlation with the results obtained in use on the specific papers. The point is that neither instrument can be used as a criterion of the value of another test until extensive data are available showing that the results of the instrument used correlate accurately with a fundamental property of paper or with a specific use result. It is hoped that this correlation will be given consideration in the future work that is done with smoothness testers based on measurement of air flow between surfaces.

# Index, Technical Section, Paper Trade Journal, Volume 105, July to December, 1937

**Prepared by Clarence J. West, Chairman, Committee on Abstracts and Bibliography, TAPPI**

The page numbers in the following index refer to the continuous paging of the *Technical Section* and have no relation to the pagination of the individual numbers of the PAPER TRADE JOURNAL.

References to abstracts of periodical articles published in the *Technical Section* are preceded by the letter "A"; those to patents are indicated by the letter "P." Other entries refer to original articles published in this *Section;* the author entries for such entries are printed in capitals. No author entries are given for the abstracts or patents.

In order to facilitate reference to the individual numbers of the PAPER TRADE JOURNAL, the following table is given, showing the pages of the *Technical Section* appearing in each of the 27 numbers of Volume 105 of the PAPER TRADE JOURNAL (July to December, 1937).

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# Modern Refractory Practice

Covering every phase of the subject of industrial furnace refractories, this publication is actually a practical service handbook, an up-to-date technical review, and a complete catalog combined in a single volume. While it follows the general lines of the first edition, published in 1929, the book has been completely rewritten, and increased in size from 180 to 296 pages.

Sixteen full-page furnace drawings have been prepared on the basis of current industrial practice in cooperation with engineers specializing in furnace design. These drawings show in detail the standard types of refractories used at every point, as well as alternate types used to meet special conditions of operation. A discussion of the particular problems encountered in the use of refractories in each type of furnace is also included.

An entire chapter is devoted to suggestions of a practical nature regarding the selection, care and use of refractories, including ordering and handling brick, bonding methods, the best ways to provide for thermal expansion, arch construction, design and placement of skewbacks, and factors affecting service life. Another new chapter, "Refractories and Their Properties," gives basic technical data on the composition, structure, and properties of refractories as affected by furnace temperatures, furnace gases and slags. A glossary and a selected list of minerals and rocks of significance to those concerned with refractories is unusually complete.

A new arrangement of formulas for calculating brickwork permits simple application by practical operating men, while at the same time offering a more fundamental approach for engineers who wish to use it. The tables showing combinations of brick required to turn circles call for much less interpolation than in the past as the diameters are given in one-inch intervales within the range of dimensions commonly employed. Tables for combinations of brick required to form arches of various spans and rises have been expanded and improved.

In recent years a number of new types and classes of refractories have been introduced; and the list of standard and special sizes available in the various types and classes has been considerably expanded. A complete review of all available sizes and shapes, illustrated by dimensional sketches, is a valuable feature of the volume.

The price of the book is $2.50, but it is offered without charge to users of refractories. For student use, the price to faculty members of universities and colleges, is $1.25 for single copies and $1.00 in lots of six or more.

MODERN REFRACTORY PRACTICE—Second Edition. Published by Harbison-Walker Refractories Company, Pittsburgh, Pa., 1937. 296 pages, 52 illustrations, 97 charts and tables, index.

## New TAPPI Members

The Executive Committee of the Technical Association of the Pulp and Paper Industry has elected the following to membership:

Rufus L. Baughn Jr., chemist pulp and paper Laboratory of the Industrial Committee of Savannah, Ga., was formerly Chemist for the International Vegetable Oil Company, Savannah.

Herbert L. Becher, chemist, Homosote Company, Trenton, N. J., is a graduate of the Technical University of Vienna, Austria and was formerly Chemist for Wall Paper Manufacturers Ltd., Sunberry-on-Thames, England.

Thomas E. Bell, district manager, Republic Flow Meters Company, Atlanta, Ga., is a 1925 graduate Mechanical Engineer of Georgia School of Technology.

G. S. Brazeau, manager, Everett, Wash. Mill, Pulp Division, Weyerhaeuser Timber Company has been transferred from associate to active membership in the Technical Association.

Earl B. Brookbank Jr., student, Institute of Paper Chemistry, Appleton, Wis., is a 1936 graduate of Lawrence College and has been employed by the Puget Sound Pulp and Timber Company, Anacortes, Wash., Weyerhaeuser Timber Company, Longview, Wash., and the Northern Paper Mills, Green Bay, Wis.

Albert W. S. Bull, chemist, Dominion Cellulose Ltd., Toronto, Ont., is a 1937 graduate in Chemical Engineering of the University of Toronto.

William Dohne, chemist, Champion Paper and Fibre Company, Canton, N. C., is a 1936 graduate of the New York State College of Forestry, Syracuse, N. Y., and was formerly an inspector for the Armstrong Cork Co., Fulton, N. Y.

Henry O. Ehrisman, sales engineer, The Foxboro Company, Foxboro, Mass., is a 1925 graduate of the Lowell Institute and was formerly employed by Holzer-Cabot Electrical Company, Hixon Electric Company, and the Atlantic Precision Co. of Boston.

Albert E. Fuller, plant manager, Pulp and Paper Laboratory of the Industrial Committee of Savannah, Ga., was formerly superintendent of the Orange Pulp and Paper Company, Orange, Texas, the Southern Kraft Company, Panama City, Fla., the Crown Williamette Paper Company, Floriston, Cal., and Foreman, Pacific Mills Ltd., Ocean Falls, B. C. Moises B. Garcia, superintendent, Papelera Moderna, Havana, Cuba, attended Havana University and was formerly Assistant Manager, Fernandez Castro y Cia, Papelera Cubana and Papelera Nacional, Havana, Cuba.

James H. Haley, president, J. H. Haley Sheet Metal Works, Chester, Pa.

James B. Hyde, Crown Zellerbach Paper Corporation, Camas, Wash., is a 1920 graduate in Mining Engineering Oregon State College and was formerly with the Anaconda Copper Mining Company, Anaconda, Mont., the Burroughs Adding Machine Company, Portland, Ore., and the U. S. Dept. of the Interior (geologist), Portland, Ore.

Harold J. De Wane is a 1931 graduate of St. Norbert College and attended the University of Wisconsin. He was formerly a Research Assistant at the Forest Products Laboratory, Madison, Wis., and was in charge of the Experimental Fibre Plant of the Bauer Bros. Machine Co., Springfield, Ohio.

Charles E. Johnson, research assistant, Institute of Paper Chemistry, is a 1933 graduate chemical engineer of the University of Minnesota and was formerly employed by the Northwest Paper Company, Cloquet, Minn., and the Waldorf Paper Products Company, St. Paul, Minn.

Simon Posen, Technical Assistant, Institute of Paper Chemistry, Appleton, Wis., is a 1936 graduate of Syracuse University.

Thomas R. Probst, student, Institute of Paper Chemistry is a 1935 graduate of Pennsylvania State College and has been employed by the Hammermill Paper Company, Erie, Pa., and the Mead Corporation, Chillicothe, Ohio.

Charles A. Richardson, Chemist, Munising Paper Company, Munising, Mich., is a graduate of Tufts College and the Institute of Paper Chemistry and was formerly with the Scott Paper Co., Chester, Pa.

Albert Salathe, Research Chemist, Brown Company, is a 1910 graduate of Colgate University and 1922 (Ph. D.) of the University of Chicago. He was head of the Chemical Engineering Department of the University of Syracuse and of the Science Department of Centenary College, Shreveport, La.

Fred Schwanberg, chemical engineer, Mosinee Paper Mills, Mosinee, Wis., is a 1937 graduate of the University of Wisconsin.

Edgar A. Lauring, assistant chemist, Minnesota & Ontario Paper Company, International Falls, Minn., is a 1933 graduate chemical engineer of the University of Minnesota.

Astorre Mayer, Manager, Cartiera Vita Mayer & Co., Milan, Italy, is a 1928 graduate (Dip. Ing.) of the University of Milan.

Roderick O'Donahue, Consulting Engineer, 420 Lexington Avenue, New York, is a graduate of Cooper Union, New York, and was formerly Engineer for the Riordon Pulp and Paper Company, Hawkesbury, Ont., Geor. F. Hardy, New York, N. Y., International Paper Company, New York, N. Y., and Oliver-United Filters Inc., New York, N. Y.

Joe Seiberlich, chemical engineer, Canadian International Paper Company, Hawkesbury, Ont., is a graduate (Dip. Ing.) University of Karlsruhe, Germany, and was formerly Chemist for Woolf & Co., Valerode, Germany.

Walter R. Surgeon, manager, Printing Ink Specialties Dept., Hilo Varnish Company, Brooklyn, N. Y., attended Brooklyn Polytechnic Institute, New York University and Columbia University and was formerly technical advisor, Frederick H. Levey Co., New York, N. Y.

Douglas G. Sutherland, vice president, Sutherland Refiner Corporation, Trenton, N. J., attended Syracuse University and was formerly Assistant Manager of the Panelyte Corporation, Trenton, N. J.

Einer Walloe, Kraft Mill Superintendent, Pacific Mills Ltd., Ocean Falls, B. C., is a 1922 graduate of the University of Oslo, Norway, and was formerly employed by the Borregaard Paper Mills, Oslo, and the Howard Smith Paper Mills, Montreal. P. Q.

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## D. E. Stowe Made District Chairman

KALAMAZOO, Mich., January 24, 1938.—Douglas E. Stowe, purchasing agent of the Eddy Paper Company, Three Rivers, Mich., was elected District Chairman of the Fruit Belt Boy Scouts Council at the annual meeting held in that city.

# Imports of Paper and Paper Stock

**Giving Manifests of New York, Boston, Philadelphia and Other Ports, of Newsprint, Wrapping, Writing, Coated, Blotting, Tissue, Strawboard, Wallboard, Cigarette Papers, Sulphite, Kraft and Ground Wood Pulp.**

## NEW YORK IMPORTS

WEEK ENDING JANUARY 22, 1938

SUMMARY

Cigarette paper .....1,044 cs.
Wall paper ..... 25 bxs.
Wall board .....3,094 bdls.
Newsprint .....3,343 rolls
Printing paper .....105 cs.
Filter paper .....6 cs.
Filter pulp .....15 pkgs.
Surface coated paper .....22 cs.
Surface baryta coated paper ..... .....82 crates, 1 cs.
Metal covered paper .....16 cs.
Basic paper .....2 cs.
Coated paper .....2 cs.
Photo paper .....3 cs.
Decalcomania paper .....2 cs. (Duplex)
Decalcomanias .....20 cs.
Transfer pictures .....3 cs.
Note paper .....1 cs.
Gummed paper .....2 cs.
Paper tubes .....47 ctns., 35 cs.
Miscellaneous paper .....51 bls., 444 rolls

### CIGARETTE PAPER

Champagne Paper Corp., *Lafayette,* Havre, 1,042 cs.
De Mauduit Paper Corp., *Lafayette,* Havre, 2 cs.

### WALL PAPER

S. K. Lonegren *Drottningholm,* Gothenburg, 25 bxs.

### WALL BOARD

Treetex Corp., *Belos,* Horneborg, 2,730 bdls.
——, *City of Fairbury,* Sundsvall, 364 bdls.

### NEWSPRINT

N. Y. Evening Journal *Markland,* Liverpool, N. S., 1,184 rolls.
N. Y. Tribune, *Markland,* Liverpool, N. S., 1,369 rolls.
World Telegram, *Markland,* Liverpool N. S., 578 rolls.
Brooklyn Daily Eagle, *Markland,* Liverpool, N. S., 172 rolls.
Westchester Newspapers *Markland,* Liverpool, N. S., 40 rolls.

### PRINTING PAPER

R. J. Saunders & Co., *Berengaria,* Southampton, 9 cs.
Steiner Paper Corp., *Bremen,* Bremen, 46 cs.
L. A. Consmiller, *Bremen,* Bremen, 50 cs.

### FILTER PAPER

H. Reeve Angel & Co. Inc., *Berengaria,* Southampton, 6 cs.

### FILTER PULP

Gerhard & Hey, *Volendam,* Rotterdam, 15 pkgs.

### SURFACE COATED PAPER

Gevaert Co. of America, *Black Tern,* Antwerp, 17 cs.
Phoenix Shipping Co., *Bremen,* Bremen, 5 cs.

### SURFACE BARYTA COATED PAPER

Globe Shipping Co., *Bremen,* Bremen, 82 crates, 1 cs.

### METAL COVERED PAPER

K. Pauli Co., *Bremen,* Bremen, 15 cs.
——, *Bremen,* Bremen, 1 cs.

### BASIC PAPER

Globe Shipping Co., *Bremen,* Bremen, 2 cs.

### COATED PAPER

W. J. Byrnes & Co., *Berengaria,* Southampton, 2 cs.

### PHOTO PAPER

Medo Photo-Supply Co., *Port Caroline,* Liverpool, 3 cs.

### DECALCOMANIA PAPER

B. F. Drakenfeld & Co., *Port Caroline,* Liverpool, 2 cs. (duplex)

### DECALCOMANIAS

L. A. Consmiller, *Bremen,* Bremen, 4 cs.
Sellers Transportation Co., *Bremen,* Bremen, 16 cs.

### TRANSFER PICTURES

Rohner Gehrig & Co., *Bremen,* Bremen, 3 cs.

### NOTE PAPER

Cartier, Inc., *Berengaria,* Southampton, 1 cs.

### GUMMED PAPER

Heemsoth Kerner Corp., *Bremen,* Bremen, 2 cs.

### PAPER TUBES

——, *Bremen,* Bremen, 47 ctns., 35 cs.

### MISCELLANEOUS PAPER

The Borregaard Co. Inc., *Drottningholm,* Gothenburg, 386 rolls.
F. L. Kramer & Co., *Drottningholm,* Gothenburg 58 rolls.
A. Giese & Son, *Lafayette,* Havre, 51 bls.

### RAGS, BAGGING, ETC.

Chase National Bank, *Barbarigo,* Trieste, 75 bls. rags.
Delia Waste Products Corp., *Kiyokawa Maru,* Kobe, 85 bls. wipers.
Hoffman Lion Mills, *Kiyokawa Maru,* Kobe, 215 bls. rags.
Chase National Bank, *Kiyokawa Maru,* Kobe, 50 bls. rags.
J. Cohen & Son Co. Inc., *Port Caroline,* Liverpool, 11 bls. rags.
National City Bank, *Black Tern,* Rotterdam, 12 bls. bagging.
Kensington Natl. Bank, (Phila.) *Chelyuskinets,* Novorrossisk, 4,362 bls. cotton waste.
W. Steck & Co., *Exochorda,* Alexandria, 158 bls. rags.

### WOOD PULP

Stora Kopparberg Corp., *Belos,* Skutskar, 1,490 bls. dry pulp, 293 tons.
——, *Belos,* Iggesund, 1,500 bls. sulphate.
Gottesman & Co. Inc., *Belos,* Iggesund, 2,000 bls. sulphate.
Tradesmans Natl. Bank Trust Co., *Belos,* Norrsundet, 2,640 bls. sulphate, 607 tons.
Absorbo Beer Pad Co., *Vulcania,* Trieste, 305 bls. wood pulp.
Lagerloef Trading Co., *City of Fairbury,* Helsingfors, 192 bls. sulphite, 32 tons.
Castle & Overton, Inc., *City of Fairbury,* Kotka, 595 bls. wood pulp, 119 tons.
Perkins Goodwin & Co., *City of Fairbury,* Sundsvall, 1,650 bls. sulphate, 275 tons.
Perkins Goodwin & Co., *City of Fairbury,* Sundsvall, 150 bls. sulphite, 25 tons.
Gottesman & Co. Inc., *City of Fairbury,* Sundsvall, 2,100 bls. sulphite, 350 tons.
Gottesman & Co. Inc., *City of Fairbury,* Sundsvall, 4,950 bls. sulphate, 825 tons.
Price & Pierce, Ltd., *City of Fairbury,* Hernosand, 3,150 bls. sulphate, 525 tons.
E. M. Sergeant Pulp & Chemical Co., *City of Fairbury,* Hernosand, 1,200 bls. sulphate, 200 tons.
E. M. Sergeant Pulp & Chemical Co., *City of Fairbury,* Hernosand, 600 bls. sulphite, 100 tons.
Bank of N. Y. Trust Co., *City of Fairbury,* Hernosand, 3,300 bls. sulphite, 550 tons.
——, *City of Fairbury,* Hernosand, 300 bls. sulphite, 50 tons.
National City Bank, *City of Fairbury,* Hernosand, 300 bls. sulphite, 50 tons.
Bulkley Dunton Pulp Co., Inc., *Consul Corfitzon,* ——, 750 bls. sulphate, 150 tons.
Bulkley Dunton Pulp Co., Inc., *Consul Corfitzon,* ——, 6,750 bls. sulphite, 1,350 tons.

WOOD PULP BOARDS

H. Fuchs & Son, *Drottningholm,* Gothenburg, 58 crates.
Fibre Case & Novelty Co. Inc., *Drottningholm,* Gothenburg, 43 bls.
Darcey Export Co., *Drottningholm,* Gothenburg, 22 bls.
Jay Madden Corp., *City of Fairbury,* Kotka, 109 rolls, 46 tons.

## NEWARK IMPORTS

WEEK ENDING JANUARY 22, 1938

Pagel Horton & Co. Inc., *Belos,* Gefle, 3,625 bls. sulphite, 725 tons.
Pagel Horton & Co. Inc., *Belos,* Gefle, 1,665 bls. sulphate, 333 tons.

## PORTLAND IMPORTS

WEEK ENDING JANUARY 22, 1938

Lagerloef Trading Co., *City of Fairbury,* Helsingfors, 390 bls. sulphite, 64 tons.
Lagerloef Trading Co., *City of Fairbury,* Helsingfors, 1,010 bls. sulphate, 202 tons.
Lagerloef Trading Co., *City of Fairbury,* Kotka, 1,260 bls. sulphate, 224 tons.
Lagerloef Trading Co., *City of Fairbury,* Kotka, 2,395 bls. sulphite, 413 tons.
M. Sone, *Capulin,* Hamburg, 498 bls. wood pulp.

## BOSTON IMPORTS

WEEK ENDING JANUARY 22, 1938

M. Sone, *Barbarigo,* Trieste, 450 bls. wood pulp.
Price & Pierce, Ltd., *Tigre,* ——, 1,000 bls. bleached sulphite.

## PHILADELPHIA IMPORTS

WEEK ENDING JANUARY 22, 1938

Stora Kopparbarg Corp. *Belos,* Skutskar, 530 bls. dry pulp, 105 tons.
National City Bank, *Belos,* Stocka, 3,000 bls. sulphite.
Philadelphia National Bank, *Kiyokawa Maru,* Kobe, 20 bls. rags, 50 bls. cotton waste.
Union Waste Co., *Kiyokawa Maru,* Kobe, 50 bls. rags.
J. W. Hampton Jr. & Co., *City of Fairbury,* Kotka, 426 rolls newsprint.
——, *City of Fairbury,* Sundsvall, 310 bdls. wall board.
Gottesman & Co. Inc., *Malaren,* Sweden, 1,425 bls. sulphite.

## WILMINGTON IMPORTS

WEEK ENDING JANUARY 22, 1938

Lagerloef Trading Co., *City of Fairbury,* Helsingfors, 3,100 bls. sulphite, 527 tons.
Lagerloef Trading Co., *City of Fairbury,* Kotka, 4,108 bls. sulphite, 821 tons.
Castle & Overton, Inc., *City of Fairbury,* Kotka, 1,219 bls. woodpulp, 243 tons.
Pagel Horton & Co. Inc., *Milos,* Sweden, 5,830 bls. wood pulp.

## BALTIMORE IMPORTS

WEEK ENDING JANUARY 22, 1938

S Shapiro & Sons, *Kiyokawa Maru,* Kobe, 296 bls. rags.
Castle & Overton, Inc., *Black Tern,* Rotterdam, 333 bls. wood pulp, 66 tons.
Pagel Horton & Co. Inc., *Heddernheim,* Sweden, 7,200 bls. wood pulp.
Price & Pierce, Ltd., *Heddernheim,* Sweden, 1,650 bls. unbleached sulphite.
M. Sone, *City of Newport News,* Hamburg, 249 bls. wood pulp.

## NEWPORT NEWS IMPORTS

WEEK ENDING JANUARY 22, 1938

Pagel Horton & Co. Inc., *Mathias Stinnes,* Sweden, 5,880 bls. wood pulp.
Gottesman & Co. Inc., *Heddernheim,* Sweden, 3,650 bls. sulphite.
Gottesman & Co. Inc., *Heddernheim,* Sweden, 1,750 bls. sulphate.

## NEW ORLEANS IMPORTS

WEEK ENDING JANUARY 22, 1938

M. Sone, *Vasaholm,* Sundsvall, 4,080 bls. wood pulp.

## Control of Liquids in Crane Movie "Flow"

How valves and fittings give mankind control over liquids and gases is revealed in a sound picture entitled "Flow" just released by Crane Company, Chicago.

Scenes of rivers in flood, thundering waterfalls and then primitive means of controlling flow are followed in the picture by an educational tour through the Chicago Works of Crane Company, where the various steps in manufacturing with iron, brass and steel are revealed. It shows valves varying in size from towering giants to the small faucets used in homes.

Some of the views of modern manufacturing processes are packed with drama. A fascinating scene shows one of the largest drop hammers in the country striking a block of white hot steel with the force of 8,300,000 foot pounds, shaping a big flange in the process. The pouring of metal in the foundries offers a striking picture. Constant testing and research activities show how science insures the maintenance of high quality standards.

The sequence of events shows how thousands of men cooperate to produce these vital units for use in food product plants, oil refineries, power plants, water works, sewage plants, distilleries, textile mills, chemical plants, mines—wherever the flow of liquids or gases needs to be controlled.

## Fiberglas Filter Media

In 1932, the idea of the commercial production of glass fiber for textile fabrication was born. The result was "Fiberglas," the trade name given to the first commercially produced, finely spun glass in staple length and continuous filament form.

In 1935, and for two years afterward, continuous research, manufacturing development, laboratory and plant tests were carried on to overcome the numerous problems that arose in making Fiberglas Filter Media a practicable product.

In 1937 this goal was achieved, and Fiberglas Filter Media is now offered by the Filter Media Corporation, Irvington-on-Hudson, N. Y., for industrial filtration and clarification.

This product solves the problem of filtering hot or cold acid solutions because it is a cloth that is durable both mechanically and chemically. While it is 100 per cent glass, it is so well woven that it functions like any filter cloth made from cotton, wool or metal.

## Roller Bearings by Shafer

Catalogue Number 14, just issued by the Shafer Bearing Corporation, 35 East Wacker Drive, Chicago, and intended to supersede all previous issues, lists the standard models of Shafer ball and roller bearing units, for every type of industrial and machine application.

Seven pages of the booklet's 74 pages are devoted to "Engineering Data" in which the use of the methods and calculations represented aid the designer or engineer select suitable bearing equipment for individual operating needs.

## New York Market Review

Office of the PAPER TRADE JOURNAL,
Wednesday, January 26, 1938.

An improved demand for many grades of paper is reported in the wholesale market for the current week. The widespread opinion that some improvement would set in early in the new year is now in effect, although sales volume continues at a relatively low level. A gradual increase in consumer buying is expected by the trade, as inventories are low and any substantial increase in demand should result in a fair volume of orders. Prices of all grades of paper are well maintained.

The newsprint market continues to report contract demand as normal and shipments moving in good volume.

The demand for ground wood papers which has been moderately active for some weeks continues to improve. The writing paper market reports conditions as better and a gradual improvement is looked for. Tissue papers are also improved for the week. The demand for book papers and similiar grades, is reported as improved and the trend continues upward.

The kraft paper market reports demand as improved for the week and while demand is relatively light, a gradual improvement in volume is expected. A certain amount of price reductions below the current contract and spot market quotations are reported, but in general prices of all grades of kraft papers have continued to hold firm.

The demand for box board is reported as improved and a gradual increase in demand is looked for in the trade.

### Chemical Pulp

The chemical pulp market reports demand as slightly improved. Prices hold firm and no changes are reported for this week. The opinion is quite general in the pulp trade that the market is "scraping bottom" and an improvement may be expected as the general business situation improves.

### Mechanical Pulp

The mechanical pulp market is quiet. Prices hold firm and no change is reported for the current week.

### Old Rope and Bagging

The demand for old rope is very light. Prices are firm and no changes are reported for this week. The bagging market is quiet and no noteworthy change in demand or prices is reported.

### Rags

The foreign rag market is inactive and nominal prices prevail. The domestic rag market is firmer for the week with price increases in several grades of rags. The demand for roofing rags is very light, with no change in prices for this week.

### Waste Paper

The demand for the higher grades of waste paper is reported as improved, while the lower grades are less firm. Prices are unchanged for the week.

### Twine

The twine market is quiet. Prices are firm and no changes are reported for the current week, with the exception of a fractional decline in the quotations of soft fiber rope.

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## Form Tag Affiliate of Standard Env.

In recognition of the need that many of their customers have for a tag manufacturer to serve northern Ohio and surrounding territories, an affiliate of the Standard Envelope Manufacturing Company has just been formed. The offices and factory of the newly formed subsidiary, known as the Sterling Tag Company, are located at 1650 East 30th street, Cleveland, Ohio.

M. G. Nolan, the head of Sterling's sales department, has had 25 years of paper converting experience and 16 years of experience in the field of tag merchandising.

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## Hawthorne Paper Co. Elects Officers

At the annual meeting of the Hawthorne Paper Company held in Kalamazoo, January 20, Wm. J. Lawrence, formerly head of the Western Paper Makers Chemical Company, was elected to the board of directors, increasing the membership from seven to eight. All other officers and directors were re-elected. George H. Gerpheide is president and general manager, C. H. Kleinstuck, vice-president, S. B. Monroe, treasurer and E. W. Chase, secretary. The board consists of the officers and A. B. Connable, A. E. Curtenius, G. T. Judd and W. J. Lawrence.

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## New England Paper Merchants to Dine

[FROM OUR REGULAR CORRESPONDENT]

BOSTON, Mass., January 24, 1938. — The annual dinner and meeting of the New England Paper Merchants Association is to be held Wednesday, February 2, at the Boston Chamber of Commerce. The speaker is to be Rev. Victor V. Sawyer, whose subject will be "The Romance of the Constitution." Business session of the Fine Paper Division and the Wrapping Paper Division will be held at 5:45 o'clock and the dinner at 6:45.

# Miscellaneous Markets

Office of the PAPER TRADE JOURNAL,
Wednesday, January 26, 1938.

BLANC FIXE—The blanc fixe market reports prices as firm and unchanged at prevailing quotations. The pulp is quoted at from $42.50 to $45 per ton, in bulk; the powder at from 3½ to 3¾ cents per pound, in barrels, at works.

BLEACHING POWDER—The demand for bleaching powder is about on the level of the preceding week. Prices are firm and unchanged from last week. Bleaching powder is quoted at from $2 to $2.25 per 100 pounds, in drums, at works.

CASEIN—The demand for casein is reported as moderate for the week. Prices are fractionally lower. Domestic standard ground is quoted at from 10 to 10½ cents per pound; domestic finely ground at from 10½ to 11 cents per pound; all prices in bags, car lot quantities.

CAUSTIC SODA—The demand for caustic soda is reported on about the level of last week. Prices are firm and unchanged. Solid caustic soda is quoted at from $2.10 to $2.30 per 100 pounds; flake and ground at from $2.50 to $2.70 per 100 pounds, in drums, at works.

CHINA CLAY—The china clay market reports prices as firm and unchanged for the current week. Imported clay is quoted at from $14.50 to $25 per ton, ship side. Domestic filler clay is offered at from $6.50 to $12 per ton; coating clay at from $11 to $22 per ton, at mines.

CHLORINE—The chlorine market reports prices as firm and unchanged from prevailing quotations. Chlorine is quoted at $2.15 per 100 pounds, in single-unit tank cars, f.o.b., works.

ROSIN—The demand for rosin is reported as fair. Prices are higher for the current week. "G" gum rosin is quoted at $6; wood rosin at $5.80 per 280 pounds, gross weight, in barrels, at Savannah. Seventy per cent gum rosin size is quoted at $3.05 per 100 pounds, in tank cars, f.o.b., shipping point.

SALT CAKE—The salt cake market reports prices as firm and unchanged from prevailing quotations. Only a very little domestic salt cake is available. Quotations on domestic grades are at from $12 to $13.50 per ton; chrome salt cake at from $11 to $12, f.o.b., shipping point. Imported salt cake is offered at from $14.50 to $15 per ton, Gulf or Atlantic Seaboard, on dock.

SODA ASH—The demand for soda ash is about on the level of the preceding week. Prices are firm and are unchanged for the week. Quotations on soda ash, in car lots, at works, per 100 pounds, are as follows: in bulk, $.90; in bags, $1.05; and in barrels, $1.35.

STARCH—The corn starch market is reported as firm. Prices are unchanged for the week. Globe pearl is quoted at $2.65 per 100 pounds, in bags, and at $2.90 in barrels. Special paper starch is quoted at $2.75 per 100 pounds, in bags, and at $3 in barrels; all prices in car lots, f.o.b., Chicago.

SULPHATE OF ALUMINA—The demand for sulphate of alumina is about on the level of the preceding week. Prices are firm and unchanged. The commercial grades are quoted at from $1.25 to $1.60; iron free at from $2 to $2.25 per 100 pounds, in barrels, at works.

SULPHUR—The demand for sulphur is about on the level of last week. Prices are firm and unchanged. Annual contracts are quoted at $18 per long ton, f.o.b., cars at mines. Spot and nearby car lots are offered at $21 per ton.

TALC—The demand for talc is about on the level of last week. Prices are firm and unchanged. Domestic talc is quoted at from $15 to $18 per ton, Eastern mines. Imported talc is offered at from $25 to $40 per ton, on dock.

# Market Quotations

## Paper

(Delivered New York)

| | | | |
|---|---|---|---|
| **News, per ton—** | | | |
| Roll, contract | $50.00 | @ | — |
| Sheets | 58.00 | @ | — |
| Kraft—per cwt.—Delivered Zone A | | | |
| No. 1 Northern | $5.25 | @ | — |
| Superstandard | 5.00 | @ | — |
| Northern Standard Wrapping | 4.75 | @ | — |
| Standard Wrapping | 4.50 | @ | — |
| Tissues—Per Ream—Carlots | | | |
| White No. 1 | 1.02½ | @ | — |
| White No. 1 M. G. | .97½ | @ | — |
| White No. 1½ | .67½ | @ | — |
| White No. 2 | .60 | @ | — |
| Anti-Tarnish M. G. | .75 | @ | — |
| Colored | .87½ | @ | — |
| Kraft | .75 | @ | — |
| Manila | .60 | @ | — |
| Unbl. Toilet. 1 M. | 3.40 | @ | — |
| Bleached Toilet | 5.26 | @ | — |
| Paper Towels— | | | |
| Unbleached | 1.95 | @ | — |
| Bleached | 3.15 | @ | — |
| Manila—per cwt.—C. l. f. a. | | | |
| No. 1 Jute | $8.25 | @ | $10.25 |
| No. 2 Jute | 7.50 | @ | 9.50 |
| No. 1 Wood | 4.00 | @ | 5.25 |
| No. 2 Wood | 3.50 | @ | 4.00 |
| **Boards, per ton—** | | | |
| News | 35.00 | @ | 37.50 |
| Chip | 35.00 | @ | 37.50 |
| Sgl. Mla. Ll. Chip | 52.50 | @ | — |
| Jute Lined Chip | 52.50 | @ | — |
| White Pat. Coated | 62.50 | @ | — |
| Kraft Liners | 55.00 | @ | — |
| Binders Boards | 75.00 | @ | 80.00 |

The following are representative of distributors' resale prices:—

**Rag Content Bonds and Ledgers—**
White, Assorted Items.
Delivered in Zone 1:

| | Bonds | Ledgers |
|---|---|---|
| 100% Rag Ext. | | |
| No. 1 | $41.40@$48.50 | $42.55@$50.00 |
| 100% Rag | 32.80@ 38.50 | 33.95@ 39.75 |
| 85% Rag | ..... | 32.20@ 37.75 |
| 75% Rag | 24.75@ 29.00 | 25.90@ 30.50 |
| 65% Rag | 21.65@ 26.25 | 22.80@ 27.75 |
| 50% Rag | 18.70@ 22.75 | 19.90@ 24.25 |
| 25% Rag | 15.80@ 19.25 | 16.95@ 20.75 |

Regular Colors @ $1.50 cwt. extra.
Heavy Colors @ $3.00 cwt. extra

**Sulphite Bonds and Ledgers—**
White, Assorted Items.
Delivered in Zone 1:

| | Bonds | Ledgers |
|---|---|---|
| No. 1 | $9.35@$11.50 | $10.55@$12.75 |
| No. 2 | 8.50@ 10.25 | 9.65@ 11.75 |
| No. 4 | 7.60@ 9.25 | 8.80@ 10.75 |

Regular Colors @ $1.50 cwt. extra.
Heavy Colors @ $3.00 cwt. extra.

**Free Sheet Book Papers—**
White, Cased Paper.
Delivered in Zone 1:

| | | |
|---|---|---|
| No. 1 Glossy Coated | $12.15 | @$14.25 |
| No. 2 Glossy Coated | 10.55 | @ 12.25 |
| No. 3 Glossy Coated | 9.35 | @ 11.00 |
| No. 4 Glossy Coated | 8.80 | @ 10.50 |
| No. 1 Antique (watermarked) | 8.80 | @ 10.50 |
| No. 2 Offset | 8.05 | @ 9.50 |
| A Grade E. F. | 7.90 | @ 9.50 |
| A Grade S. & S. C. | 8.15 | @ 9.75 |
| B Grade E. F. | 7.30 | @ 8.75 |
| B Grade S. & S. C. | 7.55 | @ 9.00 |
| C Grade E. F. | 7.00 | @ 8.50 |
| C Grade S. & S. C. | 7.25 | @ 8.75 |
| D Grade E. F. | 6.75 | @ 8.25 |
| D Grade S. & S. C. | 7.00 | @ 8.50 |

Ivory & India at $.50 cwt. extra.

## Mechanical Pulp

(On Dock, Atlantic Ports)

| | | |
|---|---|---|
| No. 1 Imported— | | |
| Moist | 35.00 | @36.00 |
| Dry | 40.00 | @42.00 |
| (Delivered) | | |
| No. 1 Domestic and Canadian | 33.00 | @35.00 |

## Chemical Pulp

(On Dock, Atlantic, Gulf and West Coast Ports)

| | | |
|---|---|---|
| **Bleached Sulphite (Domestic and Foreign)—** | | |
| Prime Bleached Sulphite | 3.00 | @ 4.15 |
| **Prime Qualities—** | | |
| Easy-Bleaching Sulphite | 2.50 | @ 3.25 |
| Strong Unbleached Sulphite | 2.25 | @ 2.75 |
| (On Dock, Atlantic Ports) | | |
| Kraft Bleached | 3.00 | @ 4.00 |
| Kraft Light & Strong | 2.50 | @ 3.00 |
| Kraft No. 1 | 2.25 | @ 2.75 |
| Kraft No. 2 | 2.00 | @ 2.25 |
| (F.o.b. Pulp Mill) | | |
| Kraft Domestic | 2.00 | @ 2.50 |
| (Delivered) | | |
| Soda Bleached | 2.90 | @ — |

Add 60 cents per short ton, dock charges for Albany; $2.50 for Lake Ports East and $3.50 for Lake Ports West of Mackinac Straits.

## Domestic Rags

**New Rags**

(Prices to Mill f. o. b. N. Y.)

| | | |
|---|---|---|
| **Shirt Cuttings—** | | |
| New White, No. 1 | 7.75 | @ 8.00 |
| Silesias No. 1 | 5.00 | @ 5.25 |
| New Unbleached | 8.25 | @ 8.50 |
| Blue Overall | 5.50 | @ 6.00 |
| Fancy | 5.50 | @ 6.00 |
| Fancy | 3.00 | @ 3.10 |
| Washables | 2.10 | @ 2.25 |
| Mixed Khaki Cuttings | 3.60 | @ 3.75 |
| O. D. Khaki Cuttings | 4.35 | @ 4.50 |

**Old Rags**

| | | |
|---|---|---|
| White, No. 1— | | |
| Repacked | 3.50 | @ 3.60 |
| Miscellaneous | 2.75 | @ 3.00 |
| White, No. 2 | | |
| Repacked | 2.10 | @ 2.25 |
| Miscellaneous | 1.70 | @ 1.80 |
| Thirds and Blues | | |
| Repacked | 1.40 | @ 1.50 |
| Miscellaneous | 1.25 | @ 1.30 |
| **Roofing Rags—** | | |
| No. 1 | 1.15 | @ 1.25 |
| No. 2 | .95 | @ 1.00 |
| No. 3 (bagging) | .65 | @ .70 |
| No. 4 | .65 | @ .70 |
| No. 5A | .65 | @ .70 |

## Foreign Rags

**New Rags**

| | | |
|---|---|---|
| New Dark Cuttings | 2.25 | @ 2.40 |
| New Mixed Cuttings | 2.00 | @ 2.30 |
| New Light Silesias | 5.50 | @ 5.75 |
| Light Flannelettes | 5.50 | @ 5.75 |
| New White Cuttings | 7.00 | @ 7.50 |
| New Light Oxford | 4.00 | @ 4.50 |
| New Light Prints | 3.00 | @ 3.35 |

**Old Rags**

| | | |
|---|---|---|
| No. 1 White Linens | 7.50 | @ 8.10 |
| No. 2 White Linens | 6.50 | @ 7.10 |
| No. 3 White Linens | 4.50 | @ 5.10 |

## Let us take care of your REJECTIONS, over-runs or seconds.

We have branches in fourteen different cities and can sell your rejections for you at a minimum expense to you; wherever they occur.

**THE SABIN ROBBINS PAPER COMPANY**

STATION A CINCINNATI, OHIO

## CLINTON STARCHES

*Special Grades for Beater and Top Sizing*

Manufactured by
**CLINTON COMPANY**
CLINTON, IOWA

**QUALITY** **SERVICE**

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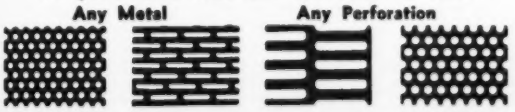
Telephone Murray Hill 2-3570

**WOOD PULP**

Cable Address: "LAGERLOF NEWYORK"

**Pulp and Paper Mill Screens**
Of Stainless Steel—Copper—Bronze—Monel—
Chemical Resisting Alloys
*Perforations that are accurate in size*

Any Metal Any Perforation



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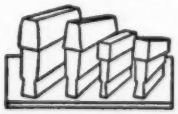
**OF ALL DESCRIPTIONS, BLANK OR FINISHED**

From Thoroughly Seasoned New Hampshire Rock Maple



*The Best Cog Stock in the World*

**THOMPSON MANUFACTURING CO.**
Lancaster, - New Hampshire

## LINDSAY WIRES

**Longerimp. Spiral Weave**
**Modified Longerimp**
**Duo-Wear and Regular Weave**

***They are all "Live Wires"***

THE LINDSAY WIRE WEAVING COMPANY
14025 Aspinwall Ave., Cleveland, Ohio

*for a Shear Cut, a Clean Cut-*
LANGSTON SLITTERS AND ROLL WINDERS
*can't be beat*

Samuel M. Langston Co., *Camden, N. J.*

| | | | |
|---|---|---|---|
| No. 4 White Linens. | 2.25 | @ | 3.25 |
| No. 1 White Cotton. | 4.25 | @ | 4.75 |
| No. 2 White Cotton. | 3.25 | @ | 3.75 |
| No. 3 White Cotton. | 2.50 | @ | 3.00 |
| No. 4 White Cotton. | 1.90 | @ | 2.20 |
| Extra Light Prints.. | 2.00 | @ | 2.40 |
| Ord. Light Prints... | 1.75 | @ | 2.15 |
| Med. Light Prints... | 1.55 | @ | 1.95 |
| Dutch Blue Cottons.. | 2.25 | @ | 2.50 |
| French Blue Linens.. | 3.00 | @ | — |
| Checks and Blues... | 2.00 | @ | — |
| Linsey Garments.... | 1.90 | @ | 2.00 |
| Dark Cottons..... | 1.50 | @ | 1.60 |
| Old Shopperies..... | 1.30 | @ | 1.45 |
| New Shopperies..... | 1.45 | @ | 1.50 |
| French Blues..... | 2.25 | @ | 2.50 |

### Old Rope and Bagging

(Prices to Mill f. o. b. N. Y.)

| | | | |
|---|---|---|---|
| Gunny No. 1— | | | |
| Foreign ..... | 2.20 | @ | 2.25 |
| Domestic ..... | 2.00 | @ | 2.15 |
| Wool Tares, light.... | 1.50 | @ | 1.75 |
| Wool Tares, heavy.. | 2.00 | @ | 2.10 |
| Bright Bagging..... | 1.60 | @ | 1.70 |
| Manila Rope— | | | |
| Foreign ..... | 2.75 | @ | 3.00 |
| Domestic ..... | 2.75 | @ | 3.00 |
| Jute Threads..... | 2.75 | @ | 3.00 |
| Sisal Strings..... | 1.75 | @ | 2.00 |
| Mixed Strings..... | .60 | @ | .70 |

### Old Waste Papers

(F. o. b. New York)

| | | | |
|---|---|---|---|
| Shavings— | | | |
| White Envelope Cuttings ..... | 2.50 | @ | 2.60 |
| Ordinary Hard White No. 1.... | 1.90 | @ | 2.00 |
| Soft White No. 1.. | 1.80 | @ | 2.20 |
| Flat Stock— | | | |
| Stitchless ..... | .70 | @ | .80 |
| Overissue Mag..... | .60 | @ | .70 |
| Solid Flat Book... | .50 | @ | .55 |
| Crumbled No. 1.... | .40 | @ | .45 |
| Ledger Stock..... | .90 | @ | .95 |
| New B. B. Chips.... | .15 | @ | .20 |
| Manila— | | | |
| New Env. Cut.... | 1.85 | @ | 2.00 |
| New Cuttings..... | 1.50 | @ | 1.60 |
| Old Kraft Machine— | | | |
| Compressed bales.. | .70 | @ | .80 |
| News— | | | |
| No. 1 White News | 1.10 | @ | 1.20 |
| Strictly Overissue. | .45 | @ | .50 |
| Strictly Folded.... | .30 | @ | .35 |
| No. 1 Mixed Paper.. | .15 | @ | .20 |

### Twines

(F. o. b. Mill)

| | | | |
|---|---|---|---|
| (Soft Fiber) | | | |
| Coarse Polished— | | | |
| India ..... | .15 | @ | .16½ |
| White Hemp..... | .16 | @ | .17½ |
| Fine Polished— | | | |
| Fine India..... | .20 | @ | .22 |
| Unpolished— | | | |
| Box ..... | .11 | @ | .11½ |
| Paper Makers..... | .11 | @ | .12¼ |
| Tube Rope ..... | .11½ | @ | .14¼ |
| Wall Paper ..... | .12½ | @ | .13¾ |
| Wrapping ..... | .14 | @ | .14½ |
| Soft Fiber Rope... | .13¼ | @ | .13¾ |
| Cotton ..... | .16 | @ | .20 |
| (Hard Fiber) | | | |
| Medium Java..... | .11 | @ | .11½ |
| Mex. Sisal..... | .10 | @ | .10½ |
| Manila ..... | .20 | @ | .27 |

| | | | |
|---|---|---|---|
| Domestic ..... | 2.25 | @ | 2.50 |
| Sisal Rope..... | 1.75 | @ | 2.00 |
| Mixed Rope..... | .50 | @ | .55 |
| Transmission Rope... | 1.25 | @ | 1.50 |
| Soft Jute Ropes..... | 1.90 | @ | 2.00 |
| Jute Carpet Threads. | 1.40 | @ | 1.60 |
| Gunny Bagging— | | | |
| Foreign ..... | 2.00 | @ | 2.10 |
| Domestic ..... | 1.60 | @ | 1.65 |
| Bleachery Burlap.... | 3.50 | @ | 4.00 |
| Scrap Burlap— | | | |
| Foreign ..... | 1.60 | @ | 1.75 |
| Domestic ..... | 1.50 | @ | 1.60 |
| Scrap Sisal..... | 1.50 | @ | 1.75 |
| Scrap Sisal for Shredding ..... | 1.90 | @ | 2.00 |
| Wool Tares, Heavy. | 1.50 | @ | 1.60 |
| New Burlap Cuttings | 1.85 | @ | 2.00 |
| Aust. wool pouches.. | 3.00 | @ | 3.25 |
| Heavy baling bagging | 1.75 | @ | 1.90 |
| Paper Mill Bagging. | 1.50 | @ | 1.60 |
| Bagging No. 2..... | .85 | @ | 1.00 |

### Domestic Rags (New)

(F. o. b. Boston)

| | | | |
|---|---|---|---|
| Shirt Cuttings— | | | |
| New Light Prints. | .03 | @ | .03¼ |
| New White No. 1. | .06¾ | @ | .07¼ |
| New White No. 2. | .05 | @ | .05½ |
| New Light Flannelettes ..... | .05¼ | @ | .05¾ |
| Silesias No. 1..... | .05½ | @ | .06 |
| New Black Silesias.. | .03¾ | @ | .04 |
| Silesias No. 1 | | | |
| Soft Unbleached..... | .06¼ | @ | .07 |
| Blue Cheviot..... | .05¾ | @ | .06¼ |
| Fancy ..... | .03 | @ | .03¼ |
| Washable ..... | .02¾ | @ | .03 |

| | | | |
|---|---|---|---|
| Cottons—According to grades— | | | |
| Blue overalls..... | .05½ | @ | .06 |
| New Black, soft... | .03¾ | @ | .04 |
| Khaki Cuttings..... | .03½ | @ | .04 |
| O. D. Khaki..... | .04 | @ | .04¼ |
| Corduroy ..... | .02¾ | @ | .03 |
| New Canvas..... | .07¼ | @ | .07¾ |
| B. V. D. Cuttings.. | .07 | @ | .07½ |

### Domestic Rags (Old)

(F. o. b. Boston)

| | | | |
|---|---|---|---|
| Canvas ..... | .04½ | @ | — |
| White No. 1— | | | |
| Repacked ..... | — | @ | 2.71 |
| Miscellaneous ..... | 2.50 | @ | 2.75 |
| White No. 2— | | | |
| Repacked ..... | 1.90 | @ | 2.06 |
| Miscellaneous ..... | 2.00 | @ | 2.21 |
| Twos and Blues..... | 1.75 | @ | 2.06 |
| Third and Blues— | | | |
| Repacked ..... | 1.37½ | @ | 1.71 |
| Miscellaneous ..... | 1.25 | @ | 1.42½ |
| Black Stockings..... | 3.90 | @ | 4.00 |
| Roofing Stock— | | | |
| No. 1..... | 1.00 | @ | 1.10 |
| No. 2..... | .75 | @ | .85 |
| No. 3..... | .65 | @ | .70 |

### Foreign Rags

(F. o. b. Boston)

| | | | |
|---|---|---|---|
| Dark Cottons..... | 1.30 | @ | 1.40 |
| Dutch Blues..... | 2.75 | @ | 2.90 |
| New Checks and Blues | 2.85 | @ | 3.00 |
| Old Fustians..... | 2.50 | @ | 2.60 |
| Old Linsey garments. | 1.75 | @ | 1.90 |
| New Silesias..... | 6.00 | @ | 6.50 |

## PHILADELPHIA

### Domestic Rags (New)

(Price to Mill, f. o. b. Phila.)

| | | | |
|---|---|---|---|
| Shirt Cuttings— | | | |
| New White, No. 1. | .06 | @ | .06½ |
| New White, No. 2. | .04 | @ | .04½ |
| Light Silesias..... | — | @ | .05 |
| Silesias, No. 1.... | — | @ | .05 |
| Black Silesias, soft. | .03 | @ | .03½ |
| New Unbleached.. | — | @ | .06 |
| Washable, No. 1.. | .01½ | @ | .01¾ |
| Blue Overall..... | .04 | @ | .04½ |
| Cottons According to grades— | | | |
| Washable, No. 2.. | .01¼ | @ | .01½ |
| New Blue..... | .01¼ | @ | .01½ |
| Fancy Percales.... | — | @ | .03 |
| New Black Soft... | .03 | @ | .03½ |
| New Light Seconds | — | @ | .05 |
| New Dark Seconds | .75 | @ | 1.00 |
| Khaki Cuttings— | | | |
| No. 1 O. D..... | .03½ | @ | .04 |
| No. 2 Mixed..... | — | @ | .02¾ |
| Corduroy ..... | — | @ | .02 |
| New Canvas..... | .05½ | @ | .06 |
| New Black Mixed. | .02½ | @ | .02¾ |

### Domestic Rags (Old)

| | | | |
|---|---|---|---|
| White No. 1— | | | |
| Repacked ..... | 2.50 | @ | 3.00 |
| Miscellaneous .... | 2.25 | @ | 2.50 |
| Thirds and Blues— | | | |
| Miscellaneous .... | 1.25 | @ | 1.50 |
| Repacked ..... | 1.50 | @ | 1.75 |
| Black Stockings (Export) ..... | 3.00 | @ | 3.50 |
| Roofing Stock— | | | |
| Foreign No. 1.... | — | @ | .75 |
| Domestic No. 1... | — | @ | .75 |
| Domestic No. 2... | .65 | @ | .75 |
| Roofing Bagging.. | .80 | @ | .90 |

### Bagging

(F. o. b. Phila.)

| | | | |
|---|---|---|---|
| Gunny, No. 1— | | | |
| Foreign ..... | 1.75 | @ | — |
| Domestic ..... | 1.70 | @ | 1.75 |
| Manila Rope..... | 3.00 | @ | 3.25 |
| Sisal Rope..... | 1.75 | @ | 2.00 |
| Mixed Rope..... | .75 | @ | 1.00 |
| Scrap— | | | |
| No. 1..... | 1.50 | @ | — |
| No. 2..... | 1.00 | @ | 1.25 |
| Wool Tares, heavy.. | 3.25 | @ | 3.50 |
| Mixed Strings..... | 1.00 | @ | 1.10 |
| No. 1 New Light Burlap ..... | 3.00 | @ | 3.50 |
| New Burlap Cuttings | 2.00 | @ | 2.25 |

### Old Papers

(F. o. b. Phila.)

| | | | |
|---|---|---|---|
| Shavings— | | | |
| No. 1 Hard White. | 2.35 | @ | 2.40 |
| No. 2 Hard White. | 2.00 | @ | 2.10 |
| No. 1 Soft White.. | 2.00 | @ | 2.10 |
| No. 2 Soft White.. | 1.40 | @ | 1.50 |
| No. 1 Mixed..... | .70 | @ | .75 |
| Solid Ledger Stock.. | 1.50 | @ | 1.60 |
| Ledger Stock, white. | 1.25 | @ | 1.30 |
| Ledger Stock, colored | .85 | @ | .90 |
| No. 1 Books, heavy.. | .85 | @ | .90 |
| Manila Cuttings..... | 1.50 | @ | 1.75 |
| Print Manila..... | .45 | @ | .50 |
| Container Manila.... | — | @ | .40 |
| Kraft Paper..... | .90 | @ | .95 |
| No. 1 Mixed Paper.. | .25 | @ | .30 |
| Straw Board Chip... | .25 | @ | .30 |
| Binders Board Chip. | .25 | @ | .30 |
| Corrugated Board... | .50 | @ | .55 |
| Overissue News..... | .55 | @ | .60 |
| Old Newspapers .... | .30 | @ | .35 |

## BOSTON

### Old Papers

(F. o. b. Boston)

| | | | |
|---|---|---|---|
| Shavings— | | | |
| No. 1 Hard White. | 2.25 | @ | 2.40 |
| No. 1 Soft White.. | 1.85 | @ | 2.15 |
| No. 2 Mixed..... | .75 | @ | .80 |
| Solid Ledger Books.. | 1.50 | @ | 1.75 |
| Overissue Ledger Stock ..... | 1.30 | @ | 1.50 |
| Mixed Ledgers..... | .85 | @ | .90 |
| No. 1 Books, heavy.. | .65 | @ | .75 |
| No. 1 Books, light... | .65 | @ | .75 |
| Crumpled Stitchless Book Stock ..... | .50 | @ | .60 |
| Manila Env. Cuttings | 1.60 | @ | 1.70 |
| Manila Envelope Cuttings, extra quality | 2.00 | @ | 2.10 |
| No. 1 Old Manila.... | .85 | @ | .95 |
| White Blank News.. | 1.30 | @ | 1.40 |
| No. 1 Kraft..... | .90 | @ | 1.00 |
| Mixed Papers ..... | .10 | @ | .15 |
| Print Manila..... | .45 | @ | .50 |
| Container Manilas... | .27½ | @ | — |
| Old Newspapers..... | .20 | @ | .25 |
| Paper Wool Strings. | — | @ | .60 |
| Overissue News..... | .45 | @ | .50 |
| Box Board Chips.... | .35 | @ | .40 |
| Corrugated Boxes.... | .25 | @ | .27½ |
| Kraft corrugated boxes | .60 | @ | .70 |
| Screenings wrappers. | .45 | @ | .50 |

### Bagging

(F. o. b. Boston)

| | | | |
|---|---|---|---|
| Manila Rope— | | | |
| Foreign ..... | 2.25 | @ | 2.50 |

## CHICAGO

### Old Papers

(F. o. b. Chicago)

| | | | |
|---|---|---|---|
| Shavings— | | | |
| No. 1 White Envelope Cuttings.... | 3.15 | @ | 3.25 |
| No. 1 Hard White.. | 2.50 | @ | 2.60 |
| No. 1 Soft White.. | 2.05 | @ | 2.10 |
| Ledger & Writings.. | 1.30 | @ | 1.40 |
| Solid Books..... | 1.20 | @ | 1.25 |
| Blanks ..... | 1.40 | @ | 1.50 |
| Krafts ..... | .90 | @ | 1.00 |
| New Kraft Cuts..... | 1.70 | @ | 1.80 |
| Manila Env. Cuts... | 2.15 | @ | 2.21 |
| Ex. No. 1 Manila... | 2.15 | @ | 2.25 |
| Print Manila..... | 1.70 | @ | 1.80 |
| Overissue News..... | .60 | @ | .70 |
| Old Newspapers— | | | |
| No. 1 Folded News | .45 | @ | .50 |
| No. 1 Mixed Paper | .35 | @ | .40 |
| Roofing Stocks— | | | |
| No. 1..... | 2.00 | @ | 2.25 |
| No. 2..... | 1.85 | @ | 2.00 |

## TORONTO

### Paper

### Bonds and Ledgers

Delivered

| | | | |
|---|---|---|---|
| No. 1 White ..... | .35½ | @ | .36½ |
| No. 1 Tints ..... | .36½ | @ | .37½ |
| No. 2 White ..... | .26½ | @ | — |
| No. 2 Tints ..... | .27½ | @ | — |
| No. 4 White ..... | — | @ | .1550 |
| No. 4 Tints ..... | .16 | @ | .1650 |
| No. 5 Bond—White . | 11.35 | @ | — |
| No. 5 Bond—Tints . | 12.35 | @ | — |
| No. 5 Bond—Golden Rod ..... | 13.35 | @ | — |
| No. 5 Ledger—White . | .1185 | @ | — |
| No. 5 Ledger—Tints. | .1285 | @ | — |
| No. 6 Bond—White . | 10.75 | @ | — |
| No. 6 Bond—Tints . | 11.25 | @ | — |
| No. 6 Bond—Golden Rod ..... | 12.75 | @ | — |
| No. 7 Bond—White . | 9.10 | @ | — |
| No. 7 Bond—Tints . | 9.60 | @ | — |
| No. 7 Bond—Golden Rod ..... | 11.10 | @ | — |
| Book— | | | |
| No. 1 M. F. ..... | 7.10 | @ | 7.35 |
| No. 2 M. F. ..... | 6.85 | @ | 7.20 |
| No. 3 M. F. ..... | 5.60 | @ | 6.20 |
| No. 1 S. C. ..... | 7.60 | @ | 7.85 |
| No. 2 S. C. ..... | 7.10 | @ | 7.35 |
| No. 3 S. C. ..... | 6.10 | @ | 6.35 |
| No. 1 Coated and Litho ..... | 12.50 | @ | — |
| No. 2 Coated and Litho ..... | 11.00 | @ | — |
| No. 3 Coated and Litho ..... | 9.50 | @ | 10.00 |
| Coated tinted..... | 13.00 | @ | 13.50 |
| Wrapping—delivered— | | | |
| Rag Brown..... | 4.85 | @ | 5.55 |
| White Wrapping.... | 4.00 | @ | — |
| "B" Manila..... | 4.90 | @ | 6.25 |
| No. 1 Manila..... | 5.50 | @ | 7.00 |
| Fiber ..... | 5.50 | @ | — |
| Kraft, No. 2..... | 5.50 | @ | — |

(F. o. b. Cars, Toronto)

| | | | |
|---|---|---|---|
| News per ton— | | | |
| Rolls (contract)...50.00 | | @ | — |
| Sheets .....58.00 | | @ | — |

### Pulp

| | | | |
|---|---|---|---|
| Ground wood.....30.00 | | @ | — |
| Unbleached Sulphite.49.00 | | @ | — |
| Book (Class 1).....64.00 | | @ | — |
| Writing (Class 2)....62.00 | | @ | — |
| Select (Class 3).....63.00 | | @ | — |

### Old Waste Paper

(In carload lots, f. o. b. Toronto)

| | | | |
|---|---|---|---|
| Shavings— | | | |
| White Env. Cut... | 2.50 | @ | — |
| Soft White..... | 2.15 | @ | — |
| White Blk. News.. | 1.25 | @ | 1.40 |
| Book and Ledger— | | | |
| Flat Magazine and Book Stock (old) | 1.00 | @ | — |
| Light and Crumpled Book Stock. | .85 | @ | — |
| Ledgers and Writings ..... | 1.20 | @ | — |
| Manilas— | | | |
| New Manila Cut... | 1.35 | @ | — |
| Printed Manilas... | .55 | @ | — |
| Kraft ..... | 1.00 | @ | 1.30 |
| News and Scrap— | | | |
| Strictly Overissue. | .65 | @ | — |
| Strictly Folded.... | .60 | @ | — |
| No. 1 Mixed Paper.. | .50 | @ | — |

### Domestic Rags

(Price to mills, f. o. b. Toronto)

| | | | |
|---|---|---|---|
| No. 1 White Shirt Cuttings ..... | .06¼ | @ | .07 |
| Fancy Shirt Cuttings | .02½ | @ | .03¼ |